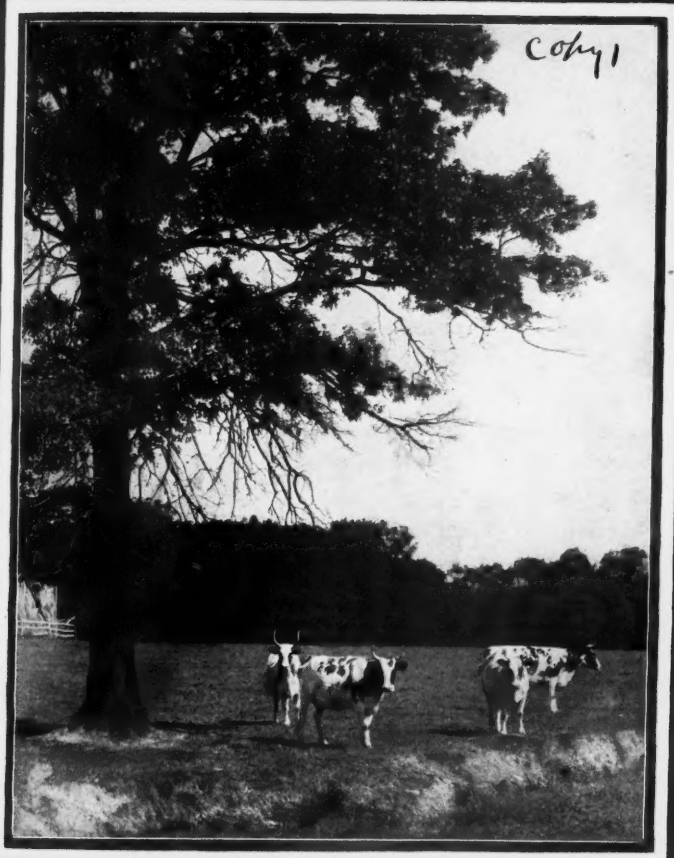
THE DENTAL DIGEST



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THE
DENTAL DIGEST

Vol. XXX SEPTEMBER, 1924 No. 9

The Evolution of Dental Education

By Eugene S. Talbot, M.D., D.D.S., Chicago, Ill.

The evolution of dental education has been hampered in many ways. The greatest drawback to its progress was the fact that dentistry was born a trade rather than a profession. As a trade it was largely mechanical and was taught, with few exceptions, by men of limited educational attainment. Its advancement naturally was slow, and as late as today the majority of teachers in America are without academic degrees. Dental schools have sprung up all over the country, and it has seemed to be the ambition of successful practitioners to teach in dental schools.

The number of schools increased between 1880 and 1900. During this period there were more than eighty schools in America, and it has been stated that in Illinois alone twenty-nine charters for dental colleges were issued by the State with seventeen to twenty in actual operation.

While there were conscientious teachers giving the best instruction of which they were capable, many schools at that time were organized and carried on for mercenary purposes. The commercial spirit in the profession has done much to retard the progress of dental education. This influence is rapidly losing ground, and the powerful agent toward this result is the multiplication of dental departments in universities. This university power has become so strong that it is forcing many commercial schools out of the circle of reputable colleges or obliging them to merge with other dental departments of universities. In the evolution of dental and medical teaching this has been the natural order of events.

Eighteen years ago there were 156 medical schools in the United States, varying in character from the best to the poorest. When the Rockefeller Foundation became interested in medical schools and classified them in grades, A, B, and C, it was found that the majority of schools came under the B and C grades. Today the number has been reduced to 86 with but few in the B and C classes. The Carnegie Foundation, which now has the welfare of dental education under consideration, will use its influence in the direction of university training for dental students.

The claim has been advanced by teachers in the commercial schools that methods requiring longer preparation will tend to reduce the

number of students. This has not been so demonstrated in medical schools; on the contrary, the ranks of applicants have been so full that the faculties have been obliged to limit the number for admission to their colleges.

In 1881 three dentists with medical degrees attempted to establish a school of dentistry in which only medical graduates were to matriculate. At that time the State law required two years' work each for graduating in both medicine and dentistry. It proved a failure, as it was too early in the evolution of both professions to succeed in such an advanced step. Since that time the curriculum in both schools has required more time and gradually the two-year term has advanced to three and four years. As medicine and dentistry are taught, eight years are required to obtain a degree in both, which might prove difficult in many cases.

In some of the European countries, Italy, Austria, Hungary and others, laws were passed whereby graduates in medicine could practise dentistry. In some countries clinical instruction is given in dentistry for a few months, resulting in the medical graduate's obtaining only a meagre knowledge of the practice of dentistry and being efficient in neither medicine nor dentistry, from the American point of view.

The recognition of focal infection of the teeth, producing septemic diseases, and reversely septemic disease causing diseases of the teeth, has aroused the teachers to the necessity of a broader education today. There is an evolution in dentistry outdistancing any previous period since dental schools were established. Dentistry is emerging from a trade into a profession, and with this change come responsibilities, for this new master is exacting.

1. First of all comes a liberal academic education. This will give a general broad outlook and ability to think and reason correctly and apply these conclusions intelligently, and, from deductions thus obtained, new facts will arise.

2. One must possess the fundamental principles of medicine to know that the practice of dentistry requires a knowledge of the relationship of the diseases of the body to diseases of the teeth. To meet this a broader education than is now taught in dental schools is necessary; namely, an ability to diagnose the etiology of disease, followed by application of proper therapeutic remedies.

3. Evolution in dentistry has involved two great questions: the shortening of the years of study and the early training of hands and fingers to produce manipulative skill. I have attempted to explain in other papers how both these obstacles can be overcome, by extending the course through the summer months and

accomplishing the mechanical operations out of the mouth in the laboratory and abolishing unnecessary dental lectures. The course can be shortened at least one year in our American schools.

4. Due credit for medical work should be given which may apply on the necessary credits for degrees in medicine later if the student desires to continue his medical studies.

The comprehensive plan of the Council of Medical Education published in the January, 1921 Dental Cosmos should be followed in all dental colleges. Another great step has just taken place to draw medicine and dentistry closer together. This occurred in Italy, December 31, 1923, when a law was signed by the Minister of Interior, the Honorable Mussolini, who also has charge of the general direction of public health, and by the Honorable Gentile, Minister of Public Instruction.

Dr. Angelo Chiavaro, a graduate of the Philadelphia Dental College, is the State professor of dentistry in the Royal University of Rome and has charge of the direction and management of the new school. This law is to take the place of the one which has been in force since April 24, 1890, by which the graduate of medicine was allowed to practise any branch of medicine he desired. The new law is based on the principles adopted by the Council of Medical Education of the American Medical Association. The law is very broad in its intention, the details to be developed as the demand arises. It will be a national school of odontology annexed to the Royal University and will be located in Rome.

The course will cover six years' work, the first four years to be taken in common with the medical students, the last two years to be devoted to special teaching in dentistry. Students who have passed examinations in any medical school in Italy after a four years' course of study and have also passed a special examination in the mechanics of dentistry may be entered on the fifth year of this new school for the study of dentistry. Over 7,000 hours are thus provided for during the six years' course.

The obligatory teaching in the dental department is included under three heads: (A) Clinics of diseases of the teeth and dental prosthesis; (B) Dental pathology and operative dentistry; (C) Orthodontia. Other subjects to be taught will be decided upon by the Regulations.

Hospital beds and dispensary will be attached to the school. Every kind of service in relation to the head, face, jaws and teeth will be administered. One of the most interesting points in the new school is that it will be in session throughout the academic year to enable the student to perform all mechanics of dentistry out of the mouth in the first four years of medical studies. In this way he will acquire

manipulative skill early in the first years of his medical studies, and his teachers will be able to decide whether he has qualifications to be a proficient dentist before he has finished his fourth year. If he should not have the ability necessary in manipulative skill, he can continue his medical studies and be ready to practise medicine in six years, if he is so inclined.

If desired, the dental graduate can continue his medical studies for two years and obtain a medical degree. A professional degree, however, does not give the graduate the right to practise a profession. After receiving his degree, he must go before the State Board, as in the United States, for final examination to practise.

There is now perhaps a great opportunity for Italian subjects who have graduated from our American dental colleges—which they recognize as the best in the world—to join Dr. Chiavaro in teaching in the new Roman school. I am sure that men of ability will receive the greatest consideration.

Teachers in dental schools all over the world will watch with much interest the development of this new departure.

31 North State Street.

Oral Sepsis—From the Viewpoint of the General Surgeon*

By Willy Meyer, M.D., New York, N. Y.
Attending Surgeon, Lenox Hill Hospital, New York

Up to a comparatively short time ago the profession of dentistry stood aside from medicine and surgery. When a medical man turned his patient over to the dentist on account of local trouble with the teeth his personal attendance upon and connection with the patient usually ceased for the time being, principally because he considered dentistry a specialty with the technic of which he was not familiar and the nature of which he had no occasion to study specifically. In a word, there was no coöperation—a flagrant defect clearly and often felt by both professions alike. Thus it came about that the dentists had to work out their own salvation; and this they certainly have succeeded in doing with great credit to themselves.

Today physicians and surgeons consider it an honor to be invited to attend your meetings and to participate in your discussions. I for one wish herewith to express my thanks and appreciation of your courtesy in affording me the opportunity to be with you tonight to open the symposium on "Oral Sepsis from the Physician's Viewpoint."

The subject of oral sepsis from the standpoint of the general surgeon cannot be discussed, it seems to me, without touching upon a number of points concerning the dental profession as such.

The Surgeons' Opinion of Dentistry

Surgeons, appreciating your work, took many practical hints from your methods and adopted them for their work in diseases of the long bones. Of course, these methods usually had to be carried out on a bigger scale, in view of the size of the bones involved, yet the principle remained the same. I need but refer to the iodoform plomb employed by Von Mosetig in cases of osteomyelitis and tuberculous osteitis subsequent to the chiseling-out of the diseased area. Many a limb has thus been saved, and the time of after-treatment shortened by many months.

However, there was no real coöperation between the general medical and dental professions. The new era of mutual cooperative work began only ten or eleven years ago. As we all know, it was due largely to the extensive studies and investigations of Dr. Frank Billings of Chicago and his learned associates, resulting in the creation of the new teaching and better understanding of focal infection, based on the

* The first of a series of papers under the general heading "A Symposium on Oral Sepsis from the Physician's Viewpoint," read before the Pathodontia Section, First District Dental Society, New York, February 19, 1923.

work of many investigators here and abroad, that we were first brought more intimately together.

The second factor in this connection was the World War, which saw at least one trained dentist in every military unit. The excellent work done by so many of your colleagues in the reconstruction of defects and deformities following injuries of the face, particularly of the jaws, will forever remain one of the brightest spots in the history of your achievements; in fact, in the evolution of dentistry as such. There you were obliged to work at the side of and in unison with the surgeon; and the later, often feeling that you understood better than he how to produce fixation in the shattered portions of the skeleton of the face because of your specialized practical training and experience, gladly transferred the entire work to you. Since then, it seems to me, dates the close and intimate association between our professions—children of the same mother as they are—and I feel sure that these ties will never again be severed.

Systemic Disease Traced to Oral Focal Infection

Returning to the question of focal infection, it seems almost ludicrous to repeat before an audience like this that Billings and his coworkers found that many medical and surgical diseases of heretofore obscure origin were produced by absorption from a focus of infection. The culprits most frequently found to be the cause were the hollow viscera; next, the lymphoglandular tissue in throat and nasopharynx; and finally, the teeth with the jaws in which they are implanted. Besides absorption from a diseased gall-bladder, appendix, colon, prostate, seminal vesicle or Fallopian tube, it was proved that the chronically affected jaws, particularly in cases of pyorrhea alveolaris with its resultant phenomena, and the granulations at the tip of the root of the teeth (so-called apical abscesses), invisible from without, represent the habitat as well as the portal of entry into the general system for a variety of microbes which, with their remarkable affinity for certain organs, are directly responsible for the beginning of disease in distant organs. Chronic arthritis, the formerly so mysterious neuritis and myositis, appendicitis, cholecystitis, ulcer of the stomach and duodenum, and many other diseases were traced down to, or at least brought into connection with, the presence of such foci. And, unfortunately for the suffering individual, the newly developed seat of inflammation gradually became chronic and then represented an additional, a new focus, as it were, for auto-intoxication, the gall-bladder being the most susceptible organ in this class.

The creation of these infections in distant parts of the body could best be explained by the action of the blood stream, the bacteria being carried by the blood as emboli into the various organs (hematogenous infection). Others claim that gradual infection by way of the lymph

stream is more often responsible for the transmission. The definite settling of this question remains for future investigation. "Find the focus and remove or eradicate it, and you have struck the hardest blow in fighting the invading foe and therewith have started the cure of the disease," became the slogan.

With the light shed on the previously obscure etiology of many diseases, and the acceptance of the new teaching by the majority of medical men here and abroad, it was but natural that immediately the most conspicuous and most generally denounced culprits should be singled out for attack. Tonsils, adenoids and teeth were removed in wholesale fashion, many of them having often been wrongly suspected as the originators of the distant trouble. As usual in the case of a new dogma, the pendulum swung too far in one direction.

Useless Extraction of Teeth

The appearance of far more acute lung abscesses than formerly seen after tonsillectomy and adenoidectomy soon sounded a warning to the laryngologists, and the fact that the original disease did not improve after the sacrifice of all the teeth gave an equal warning to the dentists. But be it said here, to the latter's honor, that the dentists usually were not responsible for the indiscriminate extraction. It was the zeal of the medical man who had referred the patient to the dentist, with the demand to remove all the teeth, that was responsible, although the advice had been given with the very best of intentions. But often, in his usual hurry of work, being rushed from early in the morning till late at night, he had not been able to elicit a careful history of the case. A patient's complaint of pain in the hip, with stiffness, and the finding of a much neglected mouth were not infrequently sufficient evidence for him to render the diagnosis of chronic arthritis and to order the teeth extracted.

An Interesting Case History

I happen to know of a patient who, always healthy before, was thrown from a buggy without sustaining a fracture. He never was confined to bed, but was able to walk around, though with a slight limp on account of the "bruises" sustained at the time of the accident, as he claimed. Because the limping and pain in the hip continued, he consulted a doctor who diagnosed chronic arthritis and advised removal of the teeth, the hygiene of which had been sorely neglected. All were removed, but the condition did not improve. Two years later a thorough local examination, measuring of the extremities, and taking of radiographs proved the presence of a consolidated impacted fissure, a crack, of the neck of the femur, with some permanent outward rotation and shortening of the extremity. A higher sole and

heel on the affected side, with avoidance of overexertion, soon brought great relief. But his teeth were gone.

In this high tide of wholesale teeth-extraction dentists themselves soon called a halt. A great many bought their own x-ray apparatus, or at least sent the patient first to an x-ray specialist. Careful study and interpretation of the films were considered a necessity. The result was increasing conservatism and the extraction of such teeth only as were beyond repair and clearly semed a menace to the owner's health.

By this gradual swinging back of the pendulum nothing of the progress made was lost. It had been generally recognized and definitely accepted that as far as general surgery is concerned the mouth certainly is one of the several portals of entry for the infecting microbes; that it may well contribute to the persistent menace of tonsillar infection; that it may often be the cause of an acute osteomyelitis of the long bones, the etiology of which it has been frequently most difficult to explain, or of a spontaneously occurring pulmonary suppuration, or appendicitis, cholecystitis, ulcer of the stomach, duodenum, etc.

Proof of Focal Origin Difficult

The exact scientific proof of such actual and original source of infection in man is, naturally, difficult, if not impossible, to procure. It is an easy matter for the general surgeon to trace, for instance, a furuncle of the kidney cortex to a recent phlegmon of the hand or to a boil on the neck with its known only cause of Staphylococcus pyogenes aureus infection. But with the chewing of food and its passing through the pharynx and throat in the act of swallowing it would seem somewhat venturesome to accuse definitely *one* locality, which the medium of infection, the food, has merely traversed, as being *alone* responsible for the distant trouble in hand and, on that basis, decree that the teeth must be extracted or the tonsils or adenoids removed. How often has decomposed food itself been the cause of local infection! Ptomain poisoning is a proof of that. As long, therefore, as we say that the diseased teeth or the pathological affection of the root of one tooth *may be* the cause or one of the causes, may be the *dominant factor* in the production of chronic arthritis, for instance, of the knee-joint, or of a neuritis of the brachial plexus, or of a myositis, and therefore needs attention, there can be no reason for controversy.

Importance of Mouth Hygiene

But today the principal point in a scientific discussion of the treatment of any subject is the question: Can the trouble under consideration be avoided? In the case of oral sepsis we are able to answer that question in the affirmative, which brings the important propaganda of mouth hygiene to the fore. In these times of prophylactic

treatment the hygiene of the mouth certainly plays a most important rôle, particularly as regards the growing generation, the children; and the teaching that caring for the teeth and gums is just as important, if not more so, than caring for other parts of the body is of greatest value in our schools, hospitals and dispensaries.

Remembering that in every act of inspiration taken through the mouth the air that flows to the alveoli of the lungs first passes over the jaws, the teeth and the gums; remembering, further, that the saliva and masticated food enter the stomach where, according to Smithies, not disinfection by its acid contents but rather a tendency toward multiplication of certain bacteria exists, it stands to reason that oral health and cleanliness *in the young* must act as one of the most efficient preventives of oral sepsis in the grown and therewith of all kinds of diseases in the middle-aged and aged. G. V. Black, the father of modern dentistry, said that one-fourth of us have septic mouths at twenty-five years of age, at forty-five nearly 90% are septic, and after fifty practically all mouths are septic. Probably not much improvement can be recorded since Dr. Black made this statement. Yet the world, with our country leading, is on the highway of improving conditions.

700 Madison Avenue.

(*To be continued*)

Tips in Anesthesia and Surgical Exodontia*

By Herman Ausubel, D.D.S., Brooklyn, N. Y.

Chief, Oral Surgery Department, Bikur Cholim Hospital, Brooklyn; Instructor in Anesthesia and Oral Surgery, Postgraduate Courses of Allied Dental Council.

(*Continued from August*)

Occasionally a tooth has to be cut in two before it is possible to remove it. This applies to molars that have curved or divergent roots, as well as to impacted canines that lie in a labio-lingual relation or that have very curved roots.

The simple expedient of cutting grooves on either side of the crown of a palatally impacted canine with a cross-cut fissure bur will often permit the application of fine, thin forceps without slipping, facilitating its removal.

The granulomata, cysts, or membranes (in which impacted teeth are generally enwrapped—Fig. 21) are then carefully dissected away with curets and fine scissors; sharp bone edges are trimmed off with rongeur forceps and the cavity thoroughly irrigated with a warm anti-

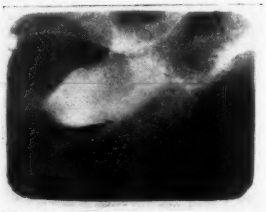


Fig. 21

septic solution to wash out all debris. The bone and flaps are then scraped a little to induce hemorrhage; and the flaps brought together and sutured, provided there is no infection present. In cases where infection is present or where the cavity formed is a large one, it is safer to suture the flap and pack with iodoform gauze in the center for a short time. It is irrigated daily, when a blood clot is encouraged, by curetting the cavity a little to produce bleeding and is protected from contamination with saliva for a few minutes. Wounds that may heal by first intention should not be disturbed with any drug or packing.

After-Treatment. Ice packs are ordered to be applied, 15 minutes each hour; a mouth wash is prescribed and 5-grain pyramidon tablets are administered internally every few hours while pain lasts.

No surgery should be instituted in very filthy mouths, but they should be cleaned thoroughly and the patients instructed to apply

*Read before the Westchester County (New York) Dental Society, May 15, 1923.

iodine on the gums once daily and use a good mouth wash, after which the operation may be undertaken with greater assurance of success and less danger of evil consequences resulting. Many cases of adenitis, periostitis, cellulitis with possibly fatal results have been produced by not taking this precaution.

No extraction or surgery of any kind should be undertaken in mouths afflicted with Vincent's infection (Fig. 22), as serious consequences may ensue.

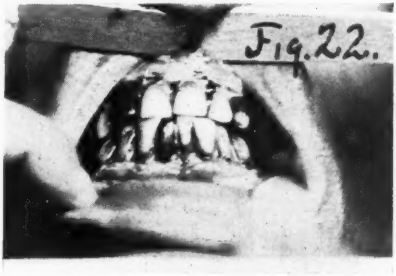


Fig. 22

Extra- and Intra-Oral Incisions. It is very seldom necessary to make an extra-oral incision around the superior maxillae (Fig. 23). (The writer made one extra-oral incision in the infra-orbital area of a very neglected case.) Good drainage may be obtained by incising the soft parts, parallel with and close to the bone, stretching the parts

Fig. 23

with Mayo scissors or hemostatic forceps and packing with iodoform gauze. The wound is irrigated daily with normal saline solution, and

ice packs applied and mouth washes used as described above, supplemented with a good laxative and the ingestion of plenty of water to help the eliminatory channels get rid of the toxic products.

It is sometimes necessary to incise abscesses pointing into the nasal cavities which originate from infected teeth. Under N_2O and O, a deep incision is made in the nose, evacuating the pus, and packed with iodoform gauze, when it will improve rapidly. The teeth responsible for the trouble may be extracted at the same time.

Palatal abscesses resulting from infected teeth (particularly from laterals and first bicuspids) are incised and packed as above. Those that extend into the pharynx, involving the tonsils, it is best to refer to the rhinologist for treatment.

Occasionally it is necessary to make facial and palatal incisions at the same time, in order to get proper drainage.

Fig. 24

In cases of cellulitis of the soft tissues adjoining the mandible an effort should be made to avoid extra-oral incisions for esthetic reasons. This may be avoided by incising facially, lingually or both, according to indications, packing and irrigating, applying ice bags on cheek as described above, or applying liquor alumini acetatis, diluted in four parts of water, kept on ice and held for about an hour on the affected area, several times daily. Laxatives and mouth washes help.

When the infection has passed beyond the boundary of the mylohyoid muscles and is pointing externally (Fig. 24), it is best to apply hot applications of antiphlogistine or any other poultice to soften up the tissues, when it may be incised externally, for the evacuation of the pus.

The incision is made under N_2O and O, parallel with and below

the lower border of the mandible (Fig. 25). The soft parts are then bluntly stretched with Mayo scissors or a hemostat in order to break up all pus pockets, which are packed with iodoform gauze. A pack of cotton or large gauze sponges are applied to the wound externally to absorb the secretions and are held in place by a modified Barton's bandage. The dressings are changed every day until the cessation of pus formation when the wound edges either are brought together with sutures or are held in place by adhesive strips, with a piece of iodoform gauze interposed to prevent the plaster from contaminating the wound edges.

In advanced cases, it is sometimes necessary to make extra- and intra-oral incisions at the same time.

Cases of Adenitis or Cellulitis Requiring Surgical Extraction. It

Fig. 25

is always a good policy to extract a tooth or root responsible for suppuration, as by this means we are enabled to get better drainage, even though we have to incise the soft tissues at the same time, which is particularly true in mandibular infections in which drainage is poor. This principle applies only to teeth or roots that may be easily dislodged with forceps or elevators. In cases requiring surgical interference, however, it is safer to incise and pack for drainage and dissect the offending tooth or root after the infection subsides.

The same principle applies in the treatment of pericoronal infections, as present in unerupted molars or canines. Treat the infection first, and you will find it then to be a simple matter to treat the case in the usual manner, without any resulting complications.

One should be particularly careful, while working in the proximity of the maxillary sinus, not to push any root or infected matter into

it, for it will surely result in an empyema of the antrum, with all the unpleasant sequelae of litigation, publicity, expense, worry, etc., attached thereto. If a root is pushed into the sinus it must be removed immediately, as it is bound to give subsequent trouble.

One should also be careful, while working in the proximity of the inferior dental nerve, not to injure it. The writer has seen many cases of prolonged numbness, extending up to the median line of the mandible, which was produced by the clumsy extraction of teeth or the careless curetting of root sockets.

Trismus. Partial or complete trismus resulting from third molar impactions are usually associated with mild or aggravated cases of adenitis or cellulitis. These may be handled successfully by making a triangular incision under N_2O and O, as described above, retracting the flap and packing the pocket with iodoform gauze, with instructions to the patient as to the use of the ice bag, mouth washes, laxatives, sedatives, etc. The mouth is pried open with a wooden wedge, which is later turned upon itself and supplemented with a suitable mechanical gag. The tooth should not be removed at the same sitting until the infection subsides.

The writer experimented with both methods in a number of cases and found it safer for the patient and obtained quicker results by leaving the tooth until the elimination of the infection rather than by extracting it at the same time.

Suturing, Curetting, Packing. Suturing is indicated whenever the wound edges cannot be coaptated without it, which is absolutely essential if we want to get healing by first intention—the surgeon's ideal. This prevents the operative field from becoming infected through food impactions, mouth secretions, etc. Should a sutured wound become infected, it is never too late to cut the sutures and resort to packing and irrigation, which takes so much longer for the wound to heal.

In those cases in which there is not sufficient soft tissue present to close up the wound gap or where we operate in an infected area, it is safer to pack with gauze in order to prevent further infection.

Curetting is indicated whenever some pathologic tissue is to be removed from around the teeth, jaws or maxillary sinuses, as the granulomatous tissue found in periapical and periodontal diseases, bone caries, polypoid tissues in the sinuses, etc. The tissues very seldom return to normal without this expedient.

Curetting should not be performed in acute cases, as an osteomyelitis may ensue. In rarefying osteitis resulting from alveolar abscesses there is nothing to cuet. Phenol sulphonic acid applied in these cavities will prove efficacious.

Hemorrhages. Every case of extensive hemorrhage may be con-

trolled by pinching the severed artery (which must be visible) with a hemostat; otherwise, pressure applied in any form, in combination with vaso-constricting or blood-coagulating drugs, like adrenalin or thromboplastin, will control the most severe cases.

When you find a gushing artery from the bone, on which a hemostat cannot be applied, a little pressure with a burnisher on the spongiose bone or the application of the actual cautery will immediately stop the bleeding.

In cases of known hemophiliacs the writer prescribes calcium lactate powders in doses of 15 to 20 grains, to be taken every few hours for two or three days as a prophylactic, before resorting to any surgery. The patient is also asked to take plenty of raw milk and raw eggs, which will help the clotting of the blood. As little mutilation as is possible should be done to the soft tissues during the operation and

Fig. 26

Fig. 27

Fig. 28

Fig. 29

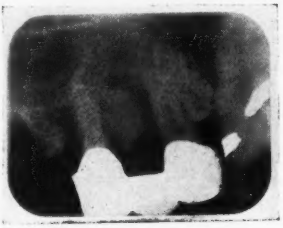


Fig. 30

Fig. 31

the sockets are packed with iodoform gauze, saturated in thromboplastin, bridged over with a splint of modeling compound, held in place between the jaws, which are held together by a four-tailed bandage. The patient is instructed to sleep in an upright position, not to use too much exertion, to apply ice on the cheek and to avoid taking hot drinks, tea, coffee or anything containing alcohol. The writer obtained gratifying results with the method described above in cases which had been very alarming and annoying to other practitioners.

Roots underneath bridges may be removed without disturbing the bridge by the raising of a flap and removing the root remnant by means of elevators, chiselling some bone, if necessary, in order to get access to it (Figs. 26, 27, 28).

Roots that are interlocked between two adjoining teeth (Figs. 29, 30, 31) may be removed by the same method without disturbing the teeth.

The procedures and principles outlined above are based on practical experience, in a busy practice of thirteen years' standing, with gratifying results.

Exodontia is an important branch of surgery, and until the dentist himself will consider it as such and educate the public as to its status and importance, with relation to the general health, and to demand more care and attention than is usually given to it and be willing to pay for the time consumed and skill necessary for its proper execution, the dentist will always be considered a mere "tooth-puller" and "tooth carpenter," and will never get recognition as an oral specialist, to which he is well entitled.

32 Court Street.

The Relationship of the Nose and Throat to the Teeth—Their Permanent Preservation

By Charles Gluck, M.D., New York, N. Y.

How closely associated the medical and dental professions have become in the recent rapid progress of medical science is only one of its amazing and, for that matter, pleasant aspects. We are compelled today to lay stress on other highly important matters besides the older and generally recognized fact that the teeth are an important adjutant of the alimentary tract, assisting in performing the first stage of alimentation. A few of these ideas I wish to bring before you for your general consideration.

The conscientious dentist cannot accomplish all he desires without constant assistance from the medical field; and the high ideals and aims of the medical profession cannot be attained without continual aid from the dental practitioner. However, to what a profound and extensive degree this is true is not fully realized or understood by the rank and file of either medical or dental workers. It is this very matter that I wish to bring before the two professions with the sincere hope that it will assist both to reach somewhat more readily the goal toward which they are striving.

This subject is so important and far-reaching that it covers practically the entire field of human welfare. It is equally true that the explanation of the greater percentage of most of the common ills that man is heir to can be found here; that is, within this domain are to be found the fundamental causes of most of man's illnesses. The close association of these two branches of medical science—the medical and the dental—is especially true in that comparatively new branch of medicine commonly known as the "nose and throat" field.

To come to the point more explicitly, I wish to state three practically iron-bound rules:

1. No one can possess good teeth unless the nose and throat are in perfect condition. Just what a perfect condition is, or, rather, just what a thoroughly normal nose and throat are will be described later.

2. Good, healthy teeth cannot exist or continue to exist in the presence of nose and throat that are abnormal (possessing one or more abnormalities). And, to make this more emphatic, I will state that no matter how frequently and how thoroughly the dentist corrects all dental defects in an individual mouth, they will return and continue to recur and extend as long as any abnormalities are present in the nose and throat.

3. To state an axiom dependent upon the two rules given above—the presence of bad teeth infer and are indicative of the presence of one or more abnormalities in the individual's nose and throat. Hence, if the nose and throat possess abnormalities, the individual must have, or will eventually have, diseased teeth or gums, or both.

Medical science is striving for a highly laudable ideal: the more or less permanent elimination of disease by the automatic maintenance of good health on the part of the body itself—so-called "preventive" medicine. This is equally true of the medical, surgical, dental, or any of the subdivisions of medical science, as they are striving to bring about a state of the body that will prevent as much as possible the development of disease in general; or, if this is impossible in its entirety, at least to institute such a condition of the body that, if disease does attack it, the attacks will be of the mildest possible forms, permitting complete recovery.

The branch treating the nose and throat and the dental branch of medical science come nearer to the attainment and to the possibility of the accomplishment of this ideal than any of the others, it seems to me, and they more than any of the others make it possible to reach this goal.

Only in recent years has the science of medicine realized the profound importance that focal infection plays in the production of most of the ills to which man is heir. The pendulum has swung so far that it embraces almost all troubles from a bald head to flat feet! Diabetes, kidney diseases, heart diseases, tuberculosis, arteriosclerosis, almost every variety of lung trouble, pleuritic infections, rheumatic infections, mental diseases, and even malignant diseases (on the theory of continuous irritation) are suspected of having their existence made possible by focal infection. For that matter, either almost every disease imaginable, with few exceptions, is directly traceable to the combination of focal infection and deficient oxygen intake or absorption, or its existence, or at least its inception, is made possible by this combination. The deeper we delve into this subject the more convinced are we becoming that these facts are true. The science of medicine will undoubtedly be a much more simplified study after this entire field is thoroughly worked out. Just how focal infection produces its multitudinous evil results is as yet not clearly understood by most of the coworkers in the medical and dental fields.

To begin with, the term "focal infection" is not sufficient. It is not comprehensive enough. Focal infection, focal absorption of toxins (toxic absorption) and suboxygenation would somewhat more thoroughly express the thought we wish to convey. Focal infection and

toxic absorption work in two ways, either quickly or slowly; that is, either acutely or chronically. In the acute forms we find rapid absorption of germs or toxins, or both, from some local point such as a tooth, the tonsils, the sinuses; from any point or points situated in the neighborhood of the nose and throat; or from some other organ or tissue of the body. The last form is rarely met. These rarer foci may be from almost any other organ of the body, but by far the commonest are the nose and throat or teeth. The nose and throat, be it understood, include the pharynx, tonsils, adenoids, nose proper and nasal accessory sinuses, and all of Waldeyer's lymphatic tissue ring. The chronic forms of focal infection are produced by the slow absorption of germs, toxins, or both, from local foci.

The chronic forms of focal infection are assisted considerably, and sometimes produce their results entirely, by focal absorption of toxins from any of the above-named locations. They work more in the presence of suboxidation (suboxygenation), which leads to a condition of lowered resistance with its invariably attendant anemia, establishing a vicious cycle which will be explained later.

A few years ago I worked out and published within the nose and throat field a formula which I termed the "common foundation of good health and disease." The execution or institution of this formula is rather burdensome to man; nevertheless it is one from which he cannot escape. Its contemplation, however, is in my opinion one of the pleasantest things in the entire medical domain. According to the light which I have acquired in the study of medicine this formula is based on two very highly important and paramount facts which are today quite extensively recognized.

The first factor is the proper preparation of the inhaled air so that it will be in a form capable of absorption to a maximum percentage by the lungs.

The second factor is the establishment of innumerable artificial breeding-places in the nose and throat, made possible by the presence of numerous abnormalities commonly found in the nose and throat. That is, the second factor is the constant presence and activity of focal infection and toxic absorption.

The first is not so much that there be present sufficient fresh air for the needs of the body to keep it in good health as that there be present in the body (the nose and throat division) the proper mechanism to prepare the air correctly so that it can be absorbed in sufficient quantities to keep the body well. Thus, the first factor is that good health is not so much dependent on the fact that the body must be surrounded by the best quality of fresh air continually as that the body must be capable of absorbing the oxygen from the air in sufficient quantities to maintain good health. Speaking in mechanical terms,

we would say that a certain mechanism in the body must be constantly properly adjusted.

A poor quality of improperly prepared air, such as is obtained by mouth-breathing or by individuals who do most of their inspiring of air through one nasal fossa or who alternatingly breathe first through one side of the nose and then through the other—such air does not present the body with sufficient oxygen to maintain proper bodily resistance. The body, principally accomplishing its work through the nose and throat, must be kept in such a state that it will possess the ability to absorb oxygen in sufficient quantities to maintain its resistance against constant attacks of infection and disease-breeding agencies, and so that it can take up enough oxygen to perform the all-important function of oxidation, keep the blood rich and prevent the development of anemia, which would produce a condition of lowered resistance subjecting the body to attacks of innumerable illnesses.

Undoubtedly the second factor is the more important of the two. To simplify matters, it is best to state that an artificial condition is created in the body, particularly in the nose and throat, which is equivalent to erecting certain portions of the body (the nose and throat and environs) into test-tube microbe-breeding localities. This can best be expressed by stating that the body is undergoing slow, continuous poisoning. Sometimes this condition acts quickly. Then it is acute, and a rapid focal infection is present. But much more often it acts slowly. The constant and continuous injurious action of the infection on the tissues of the nose and throat creates and produces unnatural artificial structures in the nose and throat. The foundation of them all is a deflection of the septum, which may be either real or artificial. The real type is an actual deflection of the cartilaginous and bony structures of the septum. The artificial type is found mostly in infants, children and young people and consists of an edematous swelling of the mucous membrane of the septum, but especially that opposite the anterior end of the middle turbinate.

The second factor, or factor of focal infection (toxic absorption), is dependent on the first factor, or factor of suboxygenation (suboxidation). Without suboxygenation there can be no focal infection (toxic absorption); that is, there can be no continuous state of focal infection and toxic absorption without the constant presence of suboxidation, which is dependent on suboxygenation. Where the latter conditions are only temporary, the focal infection or toxic absorption will likewise disappear. What invariably takes place is that infection of the nose and throat tissues occurs. Let us take as an example a child of early age. We find a pathological swelling of the tissues such as the adenoids, nasal fossae structures in particular, the turbinates, the mucous membrane of the septum, especially that opposite the trigone, which is the junction of the triangular cartilage, the perpendicular

plate of the ethmoid and the vomer. This is directly opposite the anterior end of the middle turbinate. This produces an artificially deflected septum, if we have not one already, due to a true deflection of the septum. This general swelling of all these nose and throat structures induces mouth-breathing in a purely mechanical way. Mouth-breathing gives rise to suboxidation. Suboxidation facilitates the growth of germs and the manufacturing of their toxins in the nose and throat. Right here we have established the commonest vicious cycle on earth and one probably responsible for more harm than all the other illnesses put together. It is the mechanism whereby the biggest percentage of all the other illnesses that afflict man gain their entrance into the body. This vicious cycle is likewise the easiest of all to break.

Again, focal infection and toxic absorption intensify and aggravate the general condition of suboxygenation. We are dealing with a vicious cycle: one evil increases and aggravates the other, which continues in an endless-chain fashion.

Suboxygenation reduces the resistance of the tissues to just that extent, making it permissible for germs to live and grow. To exist and multiply they must have favorable locations such as tooth sockets, tonsils, adenoid tissue, sinus holes, artificial sinuses created by deflections, spurs and ridges of the septum and hypertrophies of the turbinate bodies and adenoid bands, etc. These latter conditions cause interference with proper oxygenation of the body, giving rise to a condition of suboxidation which is essential in establishing the condition of lowered resistance. These nose and throat abnormalities interfere with proper ventilation and drainage of the nasal cavities and aeration of the nose proper and bring about the ideal condition for growth of germs and the manufacturing and absorption of their products (toxins) or their products and themselves.

Hence we can readily see how extremely subtle this entire matter is, and how very difficult of proper comprehension. For instance, how well we all know the illustration of people living in the open country and mountainous regions who develop consumption (using this disease as a type)! And then there are innumerable people living in crowded cities who do not. The second factor working automatically with the first explains this. The second factor is really the presence of one or more aforementioned abnormalities in the nose and throat which enable the production of focal infection or slow toxic absorption, or both. The first factor is the factor of suboxidation, dependent on suboxygenation, giving rise to anemia and lowered resistance. The more extensive the second factor becomes, the more pronounced the first, and vice versa, establishing a vicious cycle which can be broken only by removing the causes that produce the second factor and cannot be remedied merely by correcting the first factor. For example today,

we all recognize that tuberculosis is not an inherited disease. Disobedience to the general rules of hygiene facilitates and hastens its inception, and extremely careful observation of the hygienic rules will delay or even permanently postpone its inception, in spite of even pronounced exhibition of the second factor in any individual case.

666 Madison Avenue.

(To be continued)

Important Notice

Polk's Dental Register and Directory of the United States and Canada

The publishers have sent a questionnaire to every dentist whose name could be secured, including the 3,511 who graduated within the past few months. It is seven years since the last Dental Register appeared, and since then over 22,000 have graduated from dental colleges whose names have never appeared in a Dental Register.

This book has always been of great value to the dental profession, to editors, to publishers, to the dental trade and to all who are in any way interested in the progress of dentistry. A reliable, up-to-date list of dentists, with the additional information which this well-known publication has always presented, is an urgent necessity.

It is manifestly impossible for any one to compile such a work, to make it complete, reliable and of value to the dentist, without the prompt cooperation of every dental practitioner. It is of great importance and value to the dentist himself that his name and address appear correctly in the Register. The dentist assumes no obligation whatever. Unless the questionnaire is returned, the publisher must omit the name. The profession is urged to cooperate to the fullest extent by filling out the blank (which takes but a few moments) without loss of time after it is received, and mail it to R. L. Polk & Co., 536 S. Clark Street, Chicago. A return envelope is supplied for this purpose.

Any dentist who has not received a questionnaire is urgently requested to send in his name and address, and a blank form will be sent to him. The important point is: *prompt action,* which thereby will enable the publishers to do each one justice by recording full and correct information.

The Nature, Physical Properties and Manipulation of Dental Amalgam*

By Wesley M. Shaw, D.D.S., Denver, Colo.

(*Continued from August*)

The question of the color of amalgams has received more study than any other in the history of amalgams, and the answer today is that there is no way to change the color. Those metals which would modify the color would destroy the usefulness of the amalgam.

In Dr. Wetzel's work, he states that so long as the filling excludes moisture and sulphurated hydrogen, which is so frequently formed in the mouth, there will be no discolorations of the tooth substance by the amalgam. Therefore, the opportunity for discoloration must come from shrinkage of the amalgam or from imperfect manipulation in placing the filling. Dr. Wetzel has found that discoloration always proceeds from areas where the filling has not remained in adaptation to the cavity wall, while there is no discoloration from the areas where the adaptation to the cavity wall has remained perfect even in the same cavity. This discoloration is caused by the formation of sulphureted silver and, as it is formed, it penetrates more or less into the dentinal tubules and will often in the course of years follow these to the enamel-dentine junction. In pulpless teeth it may discolor the whole crown. It should be understood that this discoloration of the tooth substance is something different and apart from the discoloration of the exposed parts of the amalgam filling. The sulphuret can be deposited only when moisture impregnated with sulphureted hydrogen can come in contact with the filling and the dentine. It has been proved that a filling may exclude microorganisms and yet not be close enough to exclude moisture containing sulphureted hydrogen. Therefore, unless the leaky margin is in such a position that a colony of microorganisms may grow upon it or over it to furnish at that spot an acid of sufficient concentration to dissolve the calcium salts of the tooth, no decay will occur. Consequently, we have a wide discoloration of tooth substance without recurrence of decay. While it is the rule that discoloration occurs with recurrence of decay from leakage, recurrence of decay does not occur from every leakage, and it is a fact long noted that many discolorations occur without recurrence of decay.

The spheroiding of amalgam or tendency to assume globular form can be due to many things, namely, lack of balance of the alloys which cause shrinkage; faulty technic in adapting and packing the mass to cavity walls and margins; lack of proper trituration or mixing; getting

* Read before the Denver (Colo.) Dental Society, April 10, 1924.

the mix too stiff, or getting it so soft that it will continually move with every touch of the plugger and spring away from the cavity walls. Spheroiding occurs before the setting instead of during or after the setting of the mass.

In John Tomes's experiments it was proved that even in our best prepared allows, whenever a very soft, sloppy amalgam is forced into a sharp angle, the mass will slightly withdraw from the angle just as soon as the pressure is removed. This it will do so long as it is soft, no matter how often it is forced into the angle, and when the filling is removed from the matrix, after hardening, all such angles are found to be rounded instead of sharp. This will occur when there is no shrinkage of amalgam. Then it is up to us to see that we properly triturate the mass to the right consistency, not too soft and not too hard, but just as it should be. If we mix cement to set an inlay, we know just how it must be mixed, what consistency, time of operation, etc. We know that if cement is mixed too thick or too thin, it will be only a short time before we will have to reset that inlay. The old adage "haste makes waste" is true. There is no half way of doing an operation any more than there is a partly round circle. A circle is round or it is not a circle. An operation is done right or it is wrong. There is no half way about it.

Harper tells us that thorough amalgamation of high-grade alloys cannot be done by hand but must be triturated in mortar by pestle at least three minutes. If the proportions of alloy and mercury are right, the mass should, after thorough kneading, be of such consistency that it will take good impressions of the skin markings, without being too plastic. It can then be rolled into a long slender roll without breaking. Dr. Harper suggests that at the end of the mixing period the mass should be sufficiently plastic to flatten out to about one-half its diameter when rolled into a ball and dropped on the cabinet from a height of about four inches.

The very plastic consistency described should be retained during the filling of the first two-thirds of all average large and proximal occlusal cavities to insure adaptation in the use of high-grade alloys. This important requirement is best accomplished by temporarily retaining a sufficient excess of mercury which is later removed by tamping, forceful and orderly packing, and the final packing detail, with force always directed toward the cavity walls.

Tamping is done by lightly tapping each piece of amalgam placed in the cavity with the plugger until it spreads as a uniformly thick, dense and plastic layer in contact with the surrounding walls and well into the angles. Following the detail of tamping, Harper starts the packing of each piece of amalgam with a medium or large plugger at the center of the filling, stepping a little less than its diameter in one

direction outward in a gradually enlarging circle until the cavity walls are reached. The final condensation of each piece of amalgam is done by inclining the smallest plugger toward the cavity wall and stepping about one-half of its long diameter (plugger about 1.2 x 1.8 mm. in diameter) immediately against the walls and well into the angles *once around the cavity*. The packing should be continued carefully and rapidly and the filling should be built up evenly until the cavity is full and more than full. The amalgam should be heaped up over the margins and with the largest instrument possible. All the pressure the hand can give should be applied, shaking very slightly. The object of condensing this large excess upon the filling has a two-fold purpose. First, it produces force simultaneously upon all margins, which is necessary to prevent leakage. Secondly, it removes all excess of mercury and we know that the more mercury that is driven off during the process of condensing, the stronger the amalgam filling will be. This might be illustrated by taking soft snow and packing it in a pail under heavy pressure. We should find that the water would work toward the top of the mass; then we should remove that water and keep on packing the snow, removing the water and so on until the pail was filled. We should then have a congealed mass of ice, so to speak. The point I wish to bring out is to get rid of that excess of mercury, making the filling and margins much stronger than where plastic amalgam is used. A little time should then be given for the amalgam to set, after which the surplus may gradually be worked off and trimmed to form with *sharp* instruments. I should like to emphasize that it is only with sharp instruments at this stage of the filling that the trimming can be properly done without injury. Burnishers should never be used at this stage of the filling. If we only realized the injury we were doing with those burnishers by breaking up the crystallization, we would never use them. When we set an inlay, we tap it to place and we are very careful that we do not molest it when the cement is crystallizing.

For a standardized amalgam technic the following essentials are suggested:

1. The use of a reputable high-silver alloy containing not less than 65% silver, correct ingredients, accurately compounded, scientifically fused, cut, aged and tested, and the purest mercury obtainable.
2. The use of the rubber dam where possible.
3. Correct cavity preparation.
4. The proper adaptation of a well-made matrix if the cavity does not possess four walls.
5. Proper trituration of the mass, not less than three minutes.
6. Correct instrumentation and condensation of the mass.

7. Restoration of proper tooth form and contour, proper reproduction of the occlusal surface, proper contact, and at the next sitting proper polish, which will produce a restoration that you will not be ashamed of.

Quoting Dr. G. V. Black, "All of the higher grades of amalgam, *such as neither shrink nor expand,* should be kneaded as much as practical, to do with the least mercury that will make a plastic mass, and packed into the cavity before the mass becomes too brittle to cohere well under heavy hand pressure. This makes the strongest filling that can be made with amalgam." Therefore, if one of our authorities tells us that high-grade amalgams will not shrink or expand, it is up to the operator to carry through each and every step of his technic correctly, and he will have a restoration that will neither shrink nor expand and a filling material that will take its place with the very best.

The dental profession is not doing the class of amalgam work it should. Possibly the reason for this is that it considers *amalgam a poor filling material,* something that should not be put into the teeth, but, of course, if the patient will not have gold or porcelain, amalgam might do as a compromise. If the dentist has that kind of an attitude, he will never carry out proper amalgam technic, which must result in a poor amalgam restoration. Poor alloys are used, no thought or consideration given to the use of a proper matrix, contact points utterly ignored, no carving, contour, tooth form or polishing ever thought of. We all see those flat, unpolished surfaces, lack of contact, those wide overhanging cervical margins, cavity preparation where retention seems to be merely a trust in the Lord!

A Few Points We Should Never Forget

Do not have thin margins of amalgam, as amalgam requires bulk for strength.

Amalgam worked dry cannot be properly adapted to cavity walls.

Old alloys do not make strong fillings. See that the date is on every package of alloy that you use, and if it is more than a year old, discard it, as it will not give the best results.

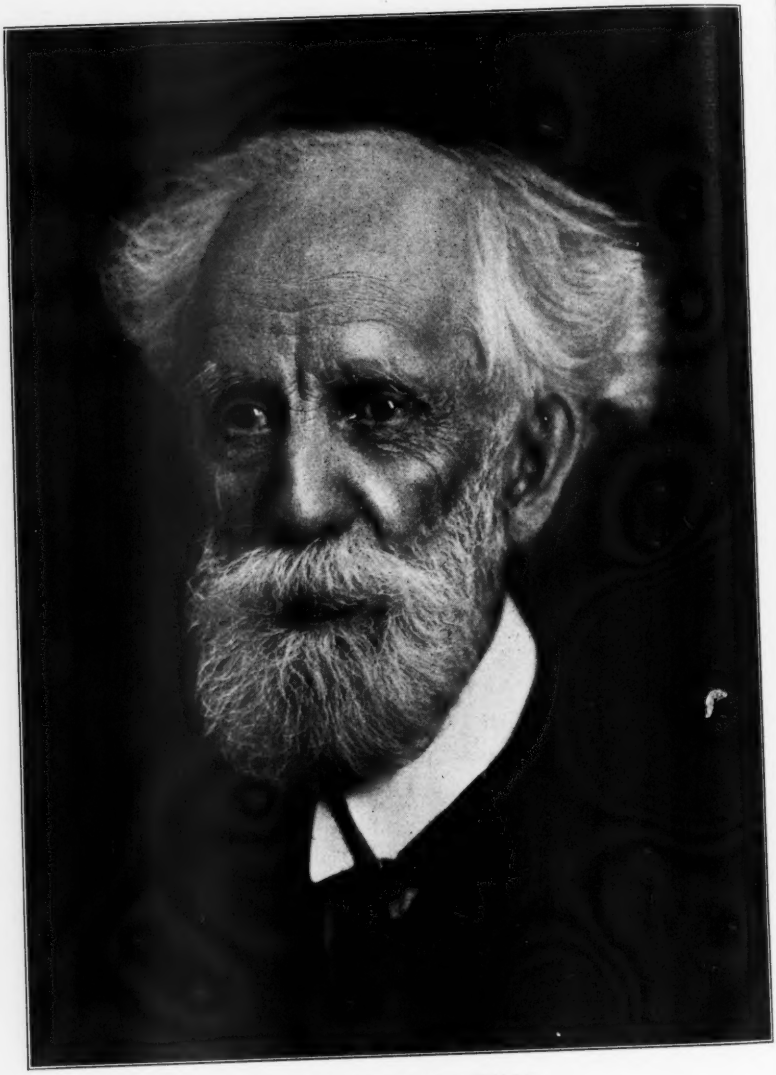
The proper finishing and polishing of that restoration at another sitting is as essential as any step of the work. If we have an overhanging cervical of amalgam, we know what it will mean—it will be only a short time until a pocket is formed, the gum gingiva gone, pyorrhea and finally the loss of the tooth and possibly the one it contacts. How often we see in our x-ray pictures those overhanging margins which have been left through absolute carelessness! If we would only realize what destruction we are creating and that we are sounding the death knell to those soft tissues, we should come out of

our day-dreams and not let the patient go from the office with the gum tissue crying out for relief. We should *never* lose sight of this fact that a tooth is only as *strong* as its *supporting tissues and structures,* and when we make a restoration in that tooth, there should be harmonious relation between that restoration, tooth and supporting structures, as it was intended there should be. Let us all attend to the proper finishing of restorations; *then* the periodontist cannot say to the patient, "Your dentist is to blame for the condition of your mouth; I will do what I can to save as many from the wreck as possible."

We are told that three-fourths of all restorations placed in the teeth are of amalgam. If this is true, why abuse it? Let us all get behind and push. Don't knock! Let us improve our technic, for there is no excuse for anyone, with the technic that we have today, to insert a poor amalgam restorations. Let us take time to do each step as we should, and, above all things, clear that cobweb idea out of our heads that amalgam is a *poor, cheap* filling. Then we can educate our patients to the fact that a good amalgam restoration is not a *lead* filling, a *tin* filling, or a *cheap* filling, as our profession has led the public to believe, but that it is an *"A No. 1" filling,* and for that class of work we should have a good fee.

In closing, I should like to make this plea. Carry out each and every step of your technic as you would for the gold inlay or foil; use the best *alloy obtainable;* pack and condense it as has been suggested; finish and polish it properly. Then I am sure you will agree with me that amalgam is a *good filling material.*

Commonwealth Building.



DR. GEORGE ALDEN MILLS

Death of Dr. Mills

Dr. George Alden Mills, who was a lineal descendant of that John Alden whom Longfellow made famous, died in New York, August 13, 1924, at the age of nearly ninety-four years.

Dr. Mills, who, as a young man, was studying to be an architect, had the misfortune to break a front tooth. The dentist whom he visited made such a skillful restoration that there dawned in the mind of young Mills a vision of the possibilities of dentistry as a constructive phase of surgery rather than as the merely mechanical thing it usually was in that day. He gave up his other studies and entered upon the practice of dentistry, in which, during a long life, he gave special attention to certain surgical aspects. He was one of the first pupils of Dr. Riggs, and after Dr. Riggs' death he was generally regarded as one of the leading authorities upon questions relating to the treatment of pyorrhea.

He began practice in Brooklyn about 1870, and it is believed that it was in his office that the Odontological Society was formed and held its first meetings. He continued in active practice until 1904, at which time he retired, but for many years thereafter he maintained a large correspondence with prominent dentists all over the world on the subjects in which he was most keenly interested; and papers prepared by him were read at important conferences when he was eighty years of age.

Dr. Mills was one of the last of that famous "Old Guard" which comprised such names as Atkinson, Kingsley, Dwinell, Rich, Bogue, Northrop and others. He possessed a delightfully serene personality and died full of years and honors.

He is survived by two sons and two daughters.

Pyorrhea

By Edmund Bedford, D.D.S., Los Angeles, Cal.

Hoping to encourage others in the treatment of pyorrhea, I am giving an outline of treatment used for over thirty years with most excellent results.

Patients come who have been told repeatedly that they will have to lose their teeth. They ask, "Can you cure pyorrhea?" And I reply, "Yes, although it is caused by the accumulation of deposits on the teeth, from a serum mucus from the blood through the glands of the gums, that hardens, setting up irritation, inflammation, suppuration and necrosis of the tooth socket. This deposit must be kept off, as it will return, so you must do your best to come back every six months to have the teeth given a thorough treatment."

As I remove the deposits I take up with the patient the origin, explaining that excess in any line or feature brings enervation, which acts on the organs of assimilation and elimination, causing them to fail in their work and resulting in fermentation, acidity, and a poisoned mucus that may take any form of disease that the body is heir to.

Careful questioning brings out that the patient may overeat, revels in sweets, is a heavy drinker of coffee or other stimulants, is making a wrong selection of foods, rushes meals, or is eating without appetite in any condition. I never fail to locate the cause, and suggest the remedy which, if faithfully followed, cleans out the system, and there is no more pyorrhea.

First Sitting: Break up deposits on all the teeth with little or no pain with pliers and cotton dipped in trichloracetic solution; apply to gums in all parts of the mouth with pumping motion. Then place in the bottom of all pockets a few shreds of cotton wound on a thin and narrow spatula after dipping in trichlor solution. The patient should return in two days.

Second Sitting: Remove deposits and repeat first treatment, and have the patient return in two days.

Third Sitting: Remove deposits, repeat treatment, and if any pockets still have pus, place powdered nitrate of silver on the slab. Moisten the spatula in the saliva and pick up a small portion of silver nitrate and place in entrance to pocket. Then with the point of the spatula pick up a small portion of cotton and carry it to the bottom of the pocket. Apply pyorrhea astringent to the gums. This will lessen the dark discoloration. The fourth treatment should follow in one week.

Fourth Sitting: Repeat third treatment and polish. If patient is anaemic or badly under tone, stop treatment and place on orange fast

for three days, and then plenty of oranges between meals for six weeks with a mono-diet as nearly as possible. A fruit meal at noon and a vegetable meal at night may be taken with a small portion of meat and a big salad.

Trichlor solution is made by placing one ounce of trichloracetic acid in a pint bottle and fill with water. For a mouth wash, use two ounces of trichlor solution placed in an 8-ounce bottle and filled with water.

Barring loose teeth which should be removed, I do not fail in one per cent of cases.

Patients are very grateful and willing to pay a good price for this service. I have found it very remunerative, as well as satisfactory. I wish that every dentist might try out this formula and technic. It is simple and easy.

1008 Loew's State Building.

Dentistry and Oral Hygiene in the Near East

By Anastasis G. Augustin, D.M.D., New York, N. Y.

In most parts of Servia, Bulgaria, Greece, Roumania, Asiatic Russia and Asia Minor there is, up to the present, a notable lack of dentists.

During the last war, in these regions, a shortage of medical equipment and aid was felt, while the dental question was altogether neglected. This could be greatly attributed to the ignorance of the responsible medical authorities to realize the importance of dentistry and oral hygiene with regard to public health in general and, particularly, in its relation to medical science.

Not long ago similar conditions existed in France and other sections of Europe, but when it was successfully demonstrated to the authorities that dentists played a very important rôle in war surgery, in focal infection cases, and in facial restorations, the powers did not hesitate to act in their behalf.

In the Near East dentists are not provided for the welfare of the communities by the Medical Health Commissioners; consequently, very much less attention is being paid by the people themselves to their teeth.

The following describes some of the ways in which the inhabitants of these regions care for their teeth. Toothbrushes are used by a very few, and charcoal, plain salt or lime is used as a dentifrice, although some use the preparations now on the market. Others use their fingers

for a toothbrush, with soap and water. But the majority never take care of their teeth. In spite of this you will meet in certain localities people with wonderful sets of teeth, who have never consulted or seen a dentist. This startling fact, I believe, is due to the nature of their diet and to the hard food which they masticate.

You will meet also persons not having any idea about dentistry, but who are very handy at inserting amalgam fillings of silver, coin money or platinum in the teeth of their relatives and friends. However, in some thriving cities there are a few dental practitioners with up-to-date equipment. These are graduates of European or American dental schools. These dentists find it hard to meet the new life of the strange cities in which they are living, and the aid they can render under such handicaps is very little indeed when you consider the great mass of the people who need attention. These people are altogether ignorant of their teeth and their care, and with the onset of toothache they apply tincture of iodine, phenol, chloroform or creosote to the gums and consider that sufficient. In case of the tooth's failing to respond to this treatment it is extracted by a barber.

So far as I know, very little root-canal work has been done by the dentists there, while porcelain work is unknown.

2025 Broadway.

Address of the President of the Northern Ohio Dental Association*

By J. V. Gentilly, D.D.S., Cleveland, Ohio

The President of these United States, and a number of those who wear hats large enough to be seen in the ring, are bringing their pet planks to Cleveland to build a strong new party platform for the G. O. P.—a platform whereon to stage a political program purposing the greatest possible good for the greatest possible number.

In like manner we, the members of the Northern Ohio Dental Association, are here assembled to promote the interests of our profession; to build, if you please, a newer and stronger platform whereon to promote the well-being of the greatest possible number of our profession and fellow-citizens. I mean to say that the welfare of our patients depends upon our welfare, and that these conventions, which at first blush may seem to serve only selfish social and class interests, are really for the benefit of all whom we serve. Modern life is so complex, its demands so multifold, that an individual, no matter how gifted or energetic he may be, can no longer function efficiently alone but must collaborate with others of his calling or profession. There is a great economy of time and energy in these alliances of men who seek to attain like ends. There is heartening strength in the fellowship of those who are engaged in like problems. There is mental refreshment in meeting those who suffer the same arrows and stings of outrageous cases. There is real joy in the society of those who have had the same difficulties as one's self in choosing the right hat to wear to the convention! But, best of all, there is *real* profit to the science of dentistry in the free exchange of opinion and experience which is the primary altruistic purpose of our gatherings.

The fact that we have come together in such goodly number, my friends, is proof enough of our appreciation of the good-fellowship which always prevails at our conventions, and I'm sure there will be plenty of entertainment and refreshment, plenty of old friendships renewed and new ones made.

As for the serious purposes of our conclave, let me outline briefly a few ideas which I believe ought to make good planks in a newer and stronger platform for the campaign of the Northern Ohio Dental Association against dental diseases.

The lecture program which your committee has prepared for this 67th session is along the lines of hygiene and advanced studies relating to the development of teeth and the pathology of certain diseases involving dental tissues.

* Delivered at Cleveland, Ohio, June 2, 1924.

The essayists appearing before you at this meeting have devoted considerable time and attention to their chosen subjects. They have experimented without prejudice and collected their findings scientifically. Many of them are great authorities in the specialties they present. There are some confusion and contradiction in every new field of research, due largely to enthusiastic professional interest and waiving of the exact methods of scientific analysis. Confusion of this sort in our field is apt to smother the interest of dentists who are too busy to devote many hours to the literature of our science. The experts who will lecture for us will dispel many a bogey and remove many a stumbling block for us.

Drs. McCollum and Howe, as well as others, have proved the vast importance of general nutrition in the dentition of both young and old. In this connection may I mention that the Defensive Diet League of America deserves our thanks for placing the literature of the subject within the reach of every practitioner.

Your special attention will be drawn to the close relationship of dentistry and medicine today. Dentists of this generation are far better read in medicine than those of the generation preceding ours, but they are just beginning to understand the vast importance of knowledge relating to the interdependence of bodily and dental health. It is gratifying to note the growth of interest in this field of research from year to year, yet wider reading and deeper studies along these lines on the part of the whole profession, instead of that of a devoted few, are most desirable. If dentistry is to hold its own among the sciences, its teachers must come to realize more fully than they seem to today that the care of the mouth is but a division of medical science.

There can be no great advance in dentistry without the cooperation of pathology, bacteriology and chemistry. The condition of the teeth, in other words, stands in much closer relationship to the condition of the whole organism of man than we generally surmise. Bearing these new departments in mind, your program committee has allotted more time than usual to lectures along these lines.

More attention than usual will be paid to dental hygienists. This valuable branch of our profession has, I fear, been somewhat neglected in our programs. I do not mean to say that we neglected the dental hygienist—we *could* not neglect the ladies if we *would*—but only that we did not pay that particular attention which it deserves to this most important branch of the practice of Preventive Dentistry. The dental hygienist's work in the schools, industrial plants and in private practice tends to bring about a higher appreciation of dentistry among all classes of people. This education makes it possible for us to give great numbers of people more efficient and economical care of the teeth than we are able to give them without it. We ought to do everything within our power to cooperate with the organization of dental hygien-

ists. I hope that some provision may be made to entitle them to membership in the Northern Ohio Dental Association.

"As the educational standards for entering the dental profession are rapidly advancing, which is a desirable situation on one hand, it is also lessening the number of dentists who may serve the community. This tends to increase the cost of dentistry to a point that is prohibitive for the masses. Would it therefore not be wise to have a group of people, such as dental hygienists, given an intensive two years' course of instruction preparing them to care for children's teeth in institutions such as schools, dispensaries and the like? This would diminish the demand for fully trained dentists for school service and would reduce the cost of school dental service for the community. We believe that dental hygienists could be trained in two years of intensive work to render the service demanded for school children in the institutions mentioned. Surgical dental service under anesthesia should not be attempted as a function of the dental hygienist. Fully educated dentists only should be expected to handle an anesthetic."

Another subject which we hope may have more attention than usual at this convention is that of child dentistry. For dubious reasons dentistry has been slow to appreciate the importance of keeping the deciduous teeth in comfort and maximum efficiency. In the average practice the care of children under ten to twelve years of age is apt to be considered a negligible and unimportant part of practice. But specialists have come to know, and it ought to be more generally realized, that the period of deciduous dentition and transition to permanent dentition is the most important in the life of the individual.

It is a well-known fact that bad teeth and slow minds go together more often than warranted by mere coincidence. Dental hygienists are doing a great deal toward the prevention of caries in children and giving them a better chance for long life, healthy bodies and normal brains. But we feel that there should be a much closer cooperation between Boards of Education, Boards of Health, dental hygienists and local dental organizations than we have at present. Let us all help to give the child a healthier and happier hold on life by recommendation of dental hygienists.

And now just a few thoughts on the business side of our organization. It was my privilege to benefit by the observations and suggestions of my predecessors in office, and I hope that my observations as your president may in turn, in some small way, prove helpful to this body and to my successor in office.

For a number of years a small membership of the Northern Ohio Dental Association met annually as we are meeting here at present. The routine of this Association has not changed much since the beginning. As its membership and influence grew the cost of mailing notices of meetings and other information had to be provided for. To meet

this contingency, dues of one dollar a year, payable in attendance, were agreed upon. For more than fifteen years this society has provided the excellent programs which mark its history at the yearly price of a pair of suspenders. A few years ago the treasury of this Association was like a hollow tooth, only more so. It is not yet filled with platinum, but I am glad to say it has a silver lining. I would suggest that, inasmuch as it takes about $3.00 to buy what $1.00 bought fifteen years ago, our dues ought to be increased in approximately that proportion.

It was during these early days that lecture courses became a leading feature of our assemblies. We were quick to realize that this method of keeping in touch with the latest developments of our science is ideal, and that if the society served no purpose but these periodical revisions and amplifications of our knowledge, it would still be worth many times its cost in time and money.

Another source of income is the exhibitor. Dental supply houses and all others catering to our profession realize full well that there is no better way of advertising and introducing their wares than by exhibiting them at the conventions of this Association. Their continuous attendance at our meetings is proof of the pudding. And we want them with us—the more the merrier! We want the exhibitor for more than the income he brings our treasury. Most of us, I am sure, judging by our own feelings, come to these conventions with as much anticipation and desire for the latest devices and newest aids that may be offered us as we have for the program itself. Yes, we need the exhibitor at our meetings to keep us in close touch with the latest developments and to help defray expenses, but let us remember that the exhibitor needs us even more than we do him.

The small manufacturer who exhibits at our annual meetings is getting his share of the business which was formerly monopolized by the big concerns. No one can hope to do business in this day and age without publicity of one sort or another. The highly glazed and artificially prepared pamphlet has seen its best day—most of us condemn it to the wastebasket at sight. But a well-arranged display of meritorious goods at one of our conventions easily gains our interest—and our orders. The personal appeal is still the surest way of gaining consideration and good-will, and the exhibitor who meets us face to face and is ready to satisfy any doubts we may have about his goods is sure to get the cream of business, while the firm that sends us scratch pads, instead of an exhibit, gets scratched.

As an officer steps down—though never out—he naturally desires that some good may come of his devotion to his duty, that whatever he has learned may serve to promote the interests of the organization. Toward that end I take the liberty of recapitulating what I believe to be the most immediate needs of this Association and of indicating

what steps should be taken to make it a more influential and more efficient body.

(1) I believe that membership fees ought to be increased. Money may be the "root of all evil," but it just as surely helps to cure or remove many an evil root! Lack of means should not be allowed to handicap officers of this organization as it does. Let us awake to the fact that we are living in a bigger and more magnanimous time than when our yearly dues were fixed at the insignificant sum of one dollar.

(2) I would recommend that deeper interest be taken in the study of the relationship of proper nutrition to the development of teeth, and that the results of these studies be more generally disseminated among the public at large. Let those who write or speak in public bear this subject in mind; let us all give our friends and patients the benefit of our knowledge in this comparatively new field of research.

(3) I believe that mouth hygiene and the care of the teeth of children should be given more time and attention at future meetings, and that we ought to get more publicity for our work in this field than we have before. The time is coming when dental hygiene will have a firmly established place as a department of preventive medicine. We cannot, therefore, afford to neglect the study of this somewhat neglected branch of our science.

(4) I recommend that efforts be made toward closer affiliation of this organization with that of the dental hygienists.

(5) I believe that the funds of the Northern Ohio Dental Association should be used to provide for the education and welfare of the membership of this organization. I mean to say that I am opposed to large appropriations for purposes other than our own, or for parties whose interests lie outside the scope of this body.

Hoping that these suggestions may prove to be fruitful seed-thoughts, I leave the high office you have so graciously bestowed upon me to work with you again in the ranks for our common zeal; an association that reflects the high ideals, professional efficiency and progressive citizenship of the individuals who compose it, a society of which we may all be justly proud.

764 Rose Building.

Convention

AMERICAN DENTAL ASSOCIATION

NOVEMBER 10-14, 1924

DALLAS, TEXAS

"The City of the Hour"

CONVENTION AND EXHIBIT HALL

ALL UNDER ONE ROOF

FIRST GENERAL SESSION, SCIENTIFIC SECTIONS, PUBLIC HEALTH EXHIBIT, CLINICS, REGISTRATION BOOTHS, MANUFACTURERS' EXHIBITS, RESTAURANT, LUNCH AND REST ROOMS

92,500 SQUARE FEET OF FLOOR SPACE

Brick and Steel Construction

LOCAL ARRANGEMENT COMMITTEE

DR. A. L. FREW, General Chairman
DR. BUSH JONES, Exhibits
DR. H. B. CAVE, Entertainment
DR. W. P. DELAFIELD, Health Exhibit
DR. A. L. NYGARD, Clinics
DR. J. J. SIMMONS, Publicity
DR. G. W. STAPLES, Information
DR. A. N. KEARBY, Halls and Hotels
DR. J. G. FIFE, Sec'y-Treas.

GENERAL ADDRESS:

CARE SEC'Y-TREAS., MEDICAL ARTS BUILDING, DALLAS, TEXAS

American Dental Association

SIXTY-SIXTH ANNUAL MEETING—DALLAS, TEXAS

November 10-14, 1924

Clinic Details

Clinics to be given at the meeting of the American Dental Association in Dallas, November 10-14, 1924, will consist of five types: (1) State Clinics; (2) Section Clinics; (3) Group or Study Club Clinics; (4) New South Clinics; (5) Junior Clinics.

The State individual clinic group will be placed upon a representative basis by requesting each State Society to furnish clinicians for this group to the number of one to the allotted number of delegates. No one will be permitted to clinic in this group without the recommendation of the President of his respective State Society. All States will be invited to clinic in this group except the States hereinafter mentioned as in the New South. All State Clinics will be staged Thursday afternoon, November 13th.

Section Clinics will be taken care of by the chairmen of the seven different sections, and each one will be requested to furnish three clinics from his respective section. No one will be allowed to clinic in this group without the endorsement of his respective section Chairman.

Group or Study Club Clinics will be secured by inviting each State Society to furnish not more than three groups of not over ten clinicians each. These groups will consist of a number of clinicians who will demonstrate their subjects in successive steps, and no group will be allowed to clinic without the endorsement of the President of the respective State Society.

New South and Junior Clinics will be handled by our hosts, and the committee in charge is now active in securing the proper material.

The States represented in the New South Clinic are Texas, Southern California, Arizona, New Mexico, Oklahoma, Mississippi, Arkansas, and Louisiana.

The Junior Clinic will consist of a number of 1920, 1921, 1922, and 1923 graduates who will clinic on various subjects, and Texas has promised us a pleasant surprise in both the New South and Junior Clinics.

All clinics except State Clinics will be staged on Friday morning, November 14th.

H. B. Pinney,
General Chairman of Clinics.

Preliminary Program for Dallas Session

FIRST GENERAL SESSION

(Convention and Exhibit Building)

TUESDAY MORNING, NOVEMBER 11—9:40 O'CLOCK

Recital 9:40-10:00
By Orchestra Dallas County Dental Society

Invocation
By Bishop Harry T. Moore of the Episcopal Church, Dallas, Texas

Vocal Selection
By Mrs. Albert T. Smith, Dallas, Texas

Address of Welcome on Behalf of the State of Texas
By Governor Pat M. Neff

Address of Welcome on Behalf of the City of Dallas
By Mayor L. Blaylock

Address of Welcome on Behalf of the Dallas Chamber of Commerce
By T. M. McCullum, President

Address of Welcome on Behalf of Baylor University
By S. P. Brooks, President

Address of Welcome on Behalf of the Texas State Dental Society
By W. O. Talbot, President

Address of Welcome on Behalf of the Dental Profession of Dallas and Presentation of Gavel to President Giffen on Behalf of the Local Committee on Arrangements
By Dr. Bush Jones

Response to Addresses of Welcome
By J. F. Biddle...Pittsburgh, Pa.

Introduction of Distinguished Visitors

President's Address
By William A. Giffen.....
.....Detroit, Mich.

Exit March

THE SCIENTIFIC SECTIONS

OPERATIVE DENTISTRY MATERIA MEDICA AND THERAPEUTICS

(Section Hall No. 3, Convention and Exhibit Building. All subsequent meetings held in the same place.)

OFFICERS OF SECTION

E. C. Mills, Chairman..Columbus, Ohio
Alfred P. Lee, Vice-Chairman.....
.....Philadelphia, Pa.
M. M. Printz, Secretary..Chicago, Ill.

Tuesday Afternoon, November 11
2 to 5 o'clock

"High Lights on Porcelain"
By Hugh Avary.....
.....San Francisco, Calif.

Discussed by
Albert Leland Le Gro.....
.....Detroit, Mich.
W. T. Reeves..Los Angeles, Calif.

"Bone and Its Regeneration"
By John P. Buckley.....
.....Hollywood, Calif

Discussed by
Edward H. Hatton...Chicago, Ill.
F. B. Moorehead.....Chicago, Ill.

"A Revised Operative Procedure from Cavity Preparation to the Finished Casting"
By L. C. Burgard..Louisville, Ky.

Discussed by
L. L. Barber.....Toledo, Ohio
T. W. Mavis...Minneapolis, Minn.
K. W. Knapp..Minneapolis, Minn.

Wednesday Morning, November 12
9 to 12 o'clock

"The Dentist's Health; How to Preserve It"
By E. H. Cary (M.D.).....
.....Dallas, Texas

Discussed by
Thomas B. Hartzell.....
.....Minneapolis, Minn.
Thomas P. Hinman..Atlanta, Ga.

"Incisal Retention vs. Lingual Retention"
By W. R. Clack.....
.....Mason City, Iowa

Discussed by
G. A. Crise.....Manhattan, Kan.
F. W. Schaefer.....Omaha, Nebr.
H. B. Tileston.....Louisville, Ky.

"Orthodontia: Factors Making It Necessary That May Be Partially Eliminated"
By Martin Dewey.....
.....New York City

Discussed by
Hugh G. Tanzey.....
.....Kansas City, Mo.
Frank M. Casto..Cleveland, Ohio

Wednesday Afternoon, November 12
2 to 5 o'clock

"The Child's Mouth"
By Haidee Weeks Guthrie....
.....New Orleans, La.

Discussed by
Gillette Hayden..Columbus, Ohio
Philip R. Thomas.....
.....Minneapolis, Minn.

"Limitations of the Roentgen Ray in Dental Practice"
By C. Edmund Kells.....
.....New Orleans, La.

Discussed by
Clarence O. Simpson.....
.....St. Louis, Mo.
Howard R. Raper.....
.....Albuquerque, N. M.

"Further Study of Casting Problems"
By K. W. Knapp.....
.....Minneapolis, Minn.

Discussed by
J. M. Prime.....Omaha, Nebr.
R. H. Volland....Iowa City, Iowa

Thursday Morning, November 13
9 to 12 o'clock

"The Immunization of Bicuspids and Molars by the Use of Gold Foil"
By J. Mark Prime.....
.....Omaha, Nebr.

Discussed by
Robert E. Blackwell.....
.....Chicago, Ill.
J. V. Conzett.....Dubuque, Iowa
H. E. Friesell....Pittsburgh, Pa.

"A General Consideration of Root Canal Therapy"
By Emerson R. Sausser.....
.....Philadelphia, Pa.

Discussed by
E. D. Coolidge.....Chicago, Ill
Edouard M. Hall.....
.....Kansas City, Mo.

"The Place of Amalgam in Dentistry"
By Wilbert J. Scruton.....
.....Oklahoma City, Okla.

Discussed by
J. J. Clarke.....Artesia, N. M.
William E. Harper..Chicago, Ill.
J. D. Patterson.....
.....Kansas City, Mo.

FULL DENTURE PROSTHESIS

(Section Hall No. 4, Convention and Exhibit Building. All subsequent meetings will be held in the same place.)

OFFICERS OF SECTION

I. Lester Furnas, Chairman.....
.....Cleveland, Ohio

Victor H. Sears, Vice-Chairman....
.....Salt Lake City, Utah

E. H. Bruening, Secretary.....
.....Omaha, Nebr.

Tuesday Afternoon, November 11
2 to 5 o'clock

"Surgical Preparation of Mouths for Dentures"
By J. A. Blue..Birmingham, Ala.

Discussed by
Ewell Neil.....Memphis, Tenn.
J. A. Heidbrink.....
.....Minneapolis, Minn.

"The Value of the Radiograph in Edentulous Mouths"
By F. F. Molt.....Chicago, Ill.

Discussed by
E. W. Browning.....
.....Salt Lake City, Utah
Earl H. Thomas.....Chicago, Ill.

Wednesday Morning, November 12
9 to 12 o'clock

"Simple Technic to Obtain Maximum Retention and Stability in Lower Impressions"
By F. M. Hight..Houston, Texas

Discussed by
B. L. McCoy.....Dallas, Texas
A. E. Kruse.....Houston, Texas

"Simple Technic to Obtain Maximum Retention and Stability in Upper Impressions"
By C. J. Stansberry.....
.....Seattle, Wash.

Discussed by
Walter E. Mendell.....Pittsburgh, Pa.
V. C. Smedley.....Denver, Colo.

Wednesday Afternoon, November 12
2 to 5 o'clock

"Some New Phases of Dentistry"
By Dayton Dunbar Campbell..Kansas City, Mo.

Discussed by
P. C. Lowery.....Detroit, Mich.
E. H. Bruening....Omaha, Nebr.

"Practical Application of Technic"
By Charles Lane...Detroit, Mich.

Discussed by
J. B. LaDue.....Chicago, Ill.

Thursday Morning, November 13
9 to 12 o'clock

"New and Original Research in the Kinematics of the Mandible"
By Marcelino Weiss.....Havana, Cuba

"Value of and Practical Methods of Obtaining Central Occlusion"
By Rupert E. Hall...Chicago, Ill.

Discussed by
R. R. Gillis.....Hammond, Ind.
M. M. House....Kansas City, Mo.

PARTIAL DENTURE PROSTHESIS

(Section Hall No. 5, Convention and Exhibit Building. All subsequent meetings held in the same place.)

OFFICERS OF SECTION

Willis A. Coston, Chairman.....Topeka, Kansas
Emory C. Thompson, Vice-Chairman.....Warren, Pa.
O. DeForest Davis, Secretary.....Minneapolis, Minn.

Tuesday Afternoon, November 11
2 to 5 o'clock

"The Necessity of Occlusal Balance in Partial Denture Construction"
By G. E. Cleophas....Beloit, Wis.

"Dental Radiography as Related to the Partial Denture Prosthetist"
By E. W. Browning.....Salt Lake City, Utah

Wednesday Morning, November 12
9 to 12 o'clock

"Metallography of Precious Metal Alloys Used in Dentistry"
By J. S. Shell.....San Francisco, Calif.

"A New and Simplified Method of Partial Denture Construction"
By Polk E. Akers...Chicago, Ill.

Wednesday Afternoon, November 12
2 to 5 o'clock

"A Review of Literature on the Eustachian Tube, with Data Indicating a Relation to the Dental Occlusion"
By Tom Smith...Langdon, N. D.

"Coordination of the Various Factors Entering into Partial Denture Construction"
By Walter F. Chappell.....Buffalo, N. Y.

Thursday Morning, November 13
9 to 12 o'clock

"Partial Denture Construction Eliminating Gingival Irritation"
By Charles A. Furrow.....Tulsa, Okla.

"Advantages and Practical Application of Removable Bridgework"
By J. J. Moffitt..Harrisburg, Pa.

ORAL SURGERY, EXODONTIA AND ANESTHESIA

(General Assembly Hall, Convention and Exhibit Building. All subsequent meetings held in the same place.)

OFFICERS OF SECTION

Boyd S. Gardner, Chairman.....Rochester, Minn.
Frederick F. Molt, Vice-Chairman..Chicago, Ill.
J. A. Blue, Secretary.....Birmingham, Ala.

Tuesday Afternoon, November 11
2 to 5 o'clock

"Focal Infection"
By Charles H. Mayo (M.D.)....Rochester, Minn.

"Important Considerations in the Diagnosis of Surgical Oral Lesions"
By Theodor Blum.....New York City

Wednesday Morning, November 12
9 to 12 o'clock

"Fundamentals Suggested by Recent Researches for Diagnosis, Prognosis and Treatment of Dental Focal Infections"
By Weston A. Price.....Cleveland, Ohio

Wednesday Afternoon, November 12
2 to 5 o'clock

"Designs of Operations"
By William L. Shearer.....Omaha, Nebr.

"Differential Diagnosis of Oral Lesions"
By Chalmers J. Lyons.....
.....Ann Arbor, Mich.

Thursday Morning, November 13
9 to 12 o'clock

"Ethylene-Oxygen Anesthesia in Dentistry"
By John F. Christiansen.....
.....Chicago, Ill.

"Actinomycosis"
By Gordon B. New (M.D.)....
.....Rochester, Minn.

"Dental Radiography"
By Frederick F. Molt.....
.....Chicago, Ill.

ORTHODONTIA AND PERIODONTIA

(Section Hall No. 1, Convention and Exhibit Building. All subsequent meetings held in the same place.)

OFFICERS OF SECTION

William C. Fisher, Chairman.....
.....New York City
Olin Kirkland, Vice-Chairman.....
.....Montgomery, Ala.
B. Frank Gray, Secretary.....
.....San Francisco, Calif.

Tuesday Afternoon, November 11
2 to 5 o'clock

"Diet and Its Relation to Periodontal Disturbances"
By E. A. Hennen.....
.....Wheeling, W. Va.

"Trophic Changes in the Osseous Structures of the Palate and the Alveolar Process in Tuberculosis"
By C. S. Kramer..Woodman, Colo

Wednesday Morning, November 12
9 to 12 o'clock

"The Application of Biologic Principles to the Practice of Periodontia"
By Benjamin Tishler.....
.....Boston, Mass.

"The Sequelae of Traumatic Occlusion"
By W. H. Scherer.....
.....Houston, Texas

"Eradication of Pyorrhea Pockets and Post-operative Packing"
By A. W. Ward.....
.....San Francisco, Calif.

Wednesday Afternoon, November 12
2 to 5 o'clock

Address by Chairman of the Section
By W. C. Fisher..New York City

"The Question of Speed in Orthodontic Treatment"
By James D. McCoy.....
.....Los Angeles, Calif.

"A Consideration of the Correct Time for Orthodontic Treatment"
By Charles R. Baker.....
.....Evanston, Ill.

Thursday Morning, November 13
9 to 12 o'clock

"The Orthodontic Sphere"
By Oscar E. Busby..Dallas, Texas

"Reasons for the Existence of an Orthodontic Specialty"
By T. G. Duckworth.....
.....San Antonio, Texas

"Orthodontic Treatment as Related to the Growth of the Face"
By W. E. Flesher.....
.....Oklahoma City, Okla.

MOUTH HYGIENE AND PREVENTIVE DENTISTRY

(Section Hall No. 7, Convention and Exhibit Building. All subsequent meetings held in same place.)

OFFICERS OF SECTION

Thomas B. McCrum, Chairman.....
.....Kansas City, Mo.
C. J. Hollister, Vice-Chairman.....
.....Harrisburg, Pa.
R. S. Towne, Secretary.....
.....Bismarck, N. D.

Tuesday Afternoon, November 11
2 to 5 o'clock

"Our Profession's Obligation to the Factory Worker" (Illustrated)
By E. L. Pettibone.....
.....Cleveland, Ohio

Discussed by
G. T. Epling.....Welch, W. Va.
Guy S. Milberry.....
.....San Francisco, Calif.

"The Dental Hygienist as a Factor in Public Education"
By W. O. Talbot.....
.....Fort Worth, Texas

"The Dental Hygienist in the Office of the General Practitioner"
By Mary S. Newbury.....
.....Cleveland, Ohio

"Essentials in Dental Health Education" (Illustrated)
By Evelyn C. Schmidt.....
.....Chicago, Ill

Discussed by
R. S. Towne....Bismarck, N. D.
Thomas B. McCrum.....
.....Kansas City, Mo.

Wednesday Morning, November 12
9 to 12 o'clock

"Preventive Dentistry for Children"
By F. Blaine Rhobotham.....
.....Chicago, Ill.

Discussed by
L. W. Helm.....Waco, Texas
Stella Risser.....Houston, Texas

"The Maintenance of Spaces After Extraction of Deciduous Teeth" (Illustrated)
By Philip R. Thomas.....
.....Minneapolis, Minn.

"Health Habits, Good and Bad"
By M. Evangeline Jordan.....
.....Los Angeles, Calif.

Wednesday Afternoon, November 12
2 to 5 o'clock

"The Detroit Plan of Dental Service" (Illustrated)
By A. G. Thompson.....
.....Detroit, Mich.

"Evolution of Rural Clinics in Virginia" (Illustrated)
By N. Talley Ballou.....
.....Richmond, Va.

"Mouth Hygiene in Mississippi"
By Bowden Hudson.....
.....Jackson, Miss.

"Dental Public Health Administration"
By Harold DeW. Cross.....
.....Boston, Mass.

Thursday Morning, November 13
9 to 12 o'clock

"The Practical Application of Diet and Nutrition to Dental Practice"
By Wallace Seccombe.....
.....Toronto, Canada

Discussed by
Percy R. Howe.....Boston, Mass.

"A Seventeen Year Experiment in Diet and Hygiene in a Children's Home"
By Trim Houston.....
.....Corsicana, Texas

Discussed by
Willis A. Coston.....
.....Kansas City, Mo.

"Chalk Talk on Diet and Teeth"
By Lucille Philbrook.....
.....Philadelphia, Pa.

"Education of the Public in General Dentistry"
By C. D. Fowlkes.....
.....Birmingham, Ala.

Discussed by
John Kennedy....New York City

HISTOLOGY, PHYSIOLOGY, PATHOLOGY, BACTERIOLOGY AND CHEMISTRY (RESEARCH)

(Section Hall No. 2, Convention and Exhibit Building. All subsequent meetings held in the same place.)

OFFICERS OF SECTION

Weston A. Price, Chairman.....
.....Cleveland, Ohio
William Hopkinson, Vice-Chairman
.....Milwaukee, Wis.
Russell W. Bunting, Secretary.....
.....Ann Arbor, Mich.

Tuesday Afternoon, November 11
2 to 5 o'clock

"A Contribution to the Etiology of Mottled Enamel"
By Theodore B. Beust.....
.....Louisville, Ky.

"The Role of Bacillus Acidophilus in Dental Caries"
By Russell W. Bunting and Faith Palmerlee.....
.....Ann Arbor, Mich.

"When and How We Get Our Teeth"
By J. S. Foote (M.D.).....
.....Omaha, Nebr.

Wednesday Morning, November 12
9 to 12 o'clock

"A Consideration of the Factors Governing Successful Root Canal Operations; Causes of Periapical Infection"
By Carl J. Grove..St. Paul, Minn.

"The Roentgen-Ray Negative Pulpless Tooth from a Bacteriologic and Experimental Standpoint"
By R. L. Haden.....
.....Kansas City, Mo.

"The Etiology of Dental Caries"
By T. B. Hartzell and W. P. Larson .....Minneapolis, Minn.

Wednesday Afternoon, November 12
2 to 5 o'clock

"Dental Changes Observed in Deficiency Feeding Experiments with Monkeys"
By Percy R. Howe.....
.....Boston, Mass.

"The Neutralization of Bacterial Toxins"
By W. P. Larson.....
.....Minneapolis, Minn.

Thursday Morning, November 13
9 to 12 o'clock

"Early Signs or Markings Found on the Septal Gingivae and Gums, Indicative of Pathologic Processes"
By George H. Mengel.....
.....El Paso, Texas

"Further Studies of the Physical and Chemical Constitution of the Tooth Enamel"
By U. G. Rickert and E. O. Scott
.....Ann Arbor, Mich.

Notice to Members and Prospective Members

OF THE

American Dental Golf Association

A splendid golf program has been arranged for all who attend the Dallas meeting of the American Dental Association and are interested in the great game of Golf. The officers of The American Dental Golf Association, the local committee, the golfers of Dallas, of Texas and of the Southwest cordially invite you, and insist upon your coming, to this meeting, and enjoying with them a few rounds of your favorite game on some very good courses. Five fine courses in Dallas and two or three in Fort Worth (30 miles away) will be open to our visitors at all times; and you are *welcome* to use them at your pleasure.

Cards to all the Clubs will be provided for our members and for those who join before or during the meeting.

We are planning for, and looking forward to, the largest and best meeting and tournament we have ever had. We realize that this is a big undertaking, but we confidently hope to make good our prophecy. Come and let us show you!

OUR GOLF PROGRAM

(Subject to Revision)

DINNER—(DON'T MISS IT!)

Sunday night, November 9, 1924, 7 P. M., Adolphus Hotel.

TOURNAMENT

Dallas Country Club and Lakewood Country Club,
Monday, November 10, 1924, tee off 7:30 A. M.

THE PLAY

1. American Dental Golf Association—*Championship.* 36 holes medal play—and runner up.
Championship Cup presented by City of Dallas.
2. American Dental Golf Association—"Handicap" (or low net). 36 holes medal play, less handicap—and runner up.
"Handicap" Cup presented by The A. P. Cary Company, Dallas.

OTHER FEATURES INCLUDE

18 hole medal handicap—Class A and runner up.
18 hole medal handicap—Class B and runner up.
18 hole medal handicap—Class C and runner up.
18 hole medal handicap—Class D and runner up.

18 HOLE LOW GROSS

For each Class A, B, C, D, and runner up to each event.
Also other special events and prizes.

SATURDAY, NOVEMBER 15, 1924

An invitation tournament will be given in Fort Worth to the visiting golfers who will stay over; details not yet arranged, but a big time promised.

THE LOCAL COMMITTEE IN DALLAS ARE

Dr. Perry Baird, Chairman, Wilson Building.
Dr. A. L. Nygard, Medical Arts Building.
Dr. W. P. Delafield, Medical Arts Building.
Dr. A. B. Conly, Medical Arts Building.
Dr. A. L. Frew, Live Oak and Haskel.

For any local information, a letter addressed to any of the committee will receive prompt and courteous attention.

An invitation to Golfers, who do not as yet belong to the American Dental Golf Association: We should like very much to have you join us. Requirements—Membership in the American Dental Association; the ability to "shoot" 18 holes in from 65 to 187 and your application, with three dollars ($3.00), which entitles you to a life membership—without dues—and the association of the finest bunch of fellows you ever met. Send in your application immediately to Dr. J. O. Hall, Secretary-Treasurer, 1101-02 Amicable Building, Waco, Texas, or to Dr. Jas. A. Loughry, President, 1636 Keith Building, Cleveland, Ohio.

Some Dentists' Advertisements

By C. Edgar Thomas, London, England

The story of early advertising constitutes a singularly interesting chapter in the history of commercial enterprise, the fascination of which is due in great part to the peculiar and unaccountable dearth of literature concerning the subject.

Modern developments in advertising, especially those of the past twenty years or so, have completely revolutionized the art of publicity gaining, so that the quaintly phrased and invariably witty advertisements that adorned the news-sheets of the seventeenth and eighteenth centuries, with their frankly personal note, have now entirely disappeared from our ken. Indeed, on perusing a number of these primitive trade and professional advertisements one cannot but marvel that they influenced the business they did, while that the majority of them were "puffs" of no ordinary magnitude it is beyond all question to doubt.

The following specimens of early trade writings relating to the dental profession are well worth preserving, because apart from their amusing qualities they incidentally impart information that renders them extremely valuable.

In the *Mercurius Politicus* for December 1600 appeared this curious advertisement, which certainly seemed to promise far too much for the fee charged:

"Most excellent and approved Dentifrices to scour and cleanse the Teeth, making them white as Ivory, preserves from the Tooth-ache; so that, being constantly used, the parties using it are never troubled with Tooth-ache; it fastens the Teeth, sweetens the Breath, and preserves the Mouth and Gums from Cankers and Imposthumes. Made by Robert Turner, Gentleman; and the rights are only to be had at Thomas Rookes, Stationer, at the Holy Lamb at the East end of St. Paul's Church, near the School, in sealed papers at 12d. the paper. *The Reader is desired to beware of counterfeits.*"

The superstitious character of that age is amply demonstrated by a further advertisement, which was issued in the *Intelligencer* some four years later. This effusion read as follows:

"Small Baggs to hang about Children's Necks, which are excellent both for the *prevention* and *cure* of Teeth, and to ease children in breeding of Teeth, are prepared by Mr. Edmund Buckworth, and constantly to be had at Mr. Philip Clark's, Keeper of the Library in the Fleet, and nowhere else at 5 shillings a bagge."

A most important and prolific dental advertiser of the middle of the eighteenth century was a certain Mr. Patence, who cheerfully,

and evidently to his own profit, combined the occupations of "dentist and dancing-master." His professional "puffs" speak for themselves; curious and eccentric as they are, they would indeed be difficult to beat for better specimens of unconscious humour and charming *naiveté*. One issued in the *Gazeteer* for December 1771 is characterised by a modesty that is very much lacking in his later announcements.

"*Mr. Patence,* Dentist and Dancing-Master, No. 8, Bolt Court, Fleet Street, whose ingenuity in making artificial Teeth, and fixing them without the least Pain, can be attested by several of the Nobility, and hopes to be honoured by the rest of the Great—may depend his Study shall be devoted to the good of every Individual. His whole Sets with a Fine Enamel on is a Proof of his excelling all Operators. He charges ten Guineas for a whole, five for an upper or under Set, and half-a-guinea for a single Tooth.—His Rose Powder for preserving the Teeth is worthy to grace and perfume the chamber of a Prince. —His Medicines for preventing all Infections and sore Throats have been experienced by all and sundry.—As for Dancing, he leaves that to the Multitude of Ladies and Gentlemen whom he has taught, and desires to be rewarded no more than his Merit deserves, nor no less. Public School nights, Monday, Wednesday, and Friday Evenings; Tuesday evenings set apart for Cotillions only. N. B.—His Rose Dentifrice may be had at Mr. Nesbit's Toy Shop, Bishopsgate Street, and at his house, at 2s. 6d. the box."

It will readily be seen that Mr. Patence promised much, but his strong point was secrecy. Advice is, as usual, offered gratis, which it is to be feared was a fair exchange for it, seeing that the applicant was almost certain to be advised to purchase some of his famous nostrums. This old-time dentist repeatedly offered to stand or fall by his skill, and a month or two later he published the following as evidence of it. It will be observed that the address has been altered, possibly on account of increased business.

"No. 3, Ludgate Hill.

This week a Lady applied to Mr. Patence, No. 3, Ludgate Hill, who had her Jaw-Bone broken by having a Tooth extracted; by another Lady with a sound front Tooth in her Hand, and two others just ready to drop from their Sockets, by having four wretched artificial ones set in by another: her Teeth are all loose. By Tincture, a Gentleman with Teeth set in as Brown as a Walnut, that never answered any end; and several other Persons in different Cases. Mr. Patence therefore begs leave to add, that it is not his Intent to take away or lessen the Merit of any one particular Person; but how shocking it is to see Ladies and Gentlemen imposed on, a good set of Teeth ruined, and left at Leisure to lament the loss in Pain, by Pretenders; for, of all Things, artificial Teeth badly set in is the most destructive of all the

good next them: but if performed in that Masterly Manner that Human Nature requires, they are a Preservation, and will answer the End which a Humane Man would wish for, or a skilful Dentist desire. Advice given Daily in Cases extraordinary and ordinary. No cure no pay."

Mr. Patence subsequently told the public that his "works, cures, and operations confirmed his supremacy over every dentist in this kingdom; also physicians, curing man, woman, and child, when not one of them can give relief." Then, again, his artificial teeth were composed of "six different enamels, warranted never to turn black." But teeth troubles did not comprise the extent of his large practice; in reality, they were quite a small branch of the business, for he guaranteed to replace "fallen noses," besides challenging all known "and unknown" diseases, being, as he said, "mechanically accurated and anatomically perfect in the human structure." To say less, he remarked, would be "doing an act unjust to himself, his patients, and his Maker, whose gifts are disposed of to whom he pleases." In the *Morning Post* in 1775 he published the following account of his achievements, having, in the meantime, once again changed his address.

"To the *Nobility, Gentry,* and others.

Patence, Surgeon by birth, and Dentist, having had Ten Years' Practice, performs every Operation on the Teeth, Gums, etc., with superior Skill, and whose Cures are not excelled or even equalled by any Dentist whatever. And as a Confirmation of the same, please to observe the following:

"October 5. A gentleman who had lost all his Teeth, his Gums ulcerated and scorbutic, in Five Days made a perfect Cure, fixed him in a whole set of natural Teeth, without Springs, or any Fastening.

"October 16. A Lady, whose Jaw was fractured by a Barber, her Teeth loose, her Gums ulcerated, attended with a running Matter, and an inflammation in her Cheeks, with a callous Swelling, cured without poulticing or cutting.

"October 20. A Lady had lost all her upper Teeth by using Powders and Tinctures that are advertised to Cure Everything, her Mouth ulcerated, and her Breath nauseous, is now delicately Clean, and replaced the Teeth with those that never change their Colour.

"Sunday, October 29. Perfectly relieved a Person that had lost both Palate and Speech; when he drank or ate it came out at his Nostrile, and had been in that State Three Years; he had applied to Surgeons and several Hospitals, who deemed him incurable, and told him, one and all, he could have no Relief; he now speaks articulate, eats, and drinks with pleasure, which if anyone should doubt, he can refer them to the Man.

"These with upwards of three thousand Operations and Cures, have been accomplished by your humble Servant,

M. PATENCE.

At 403, in the Strand, near Southampton Street, London, where the Teeth, though ever so foul, are made delicately white in six Minutes, and Medicines given for their Preservation, for half a Guinea, any hour after ten in the Morning. Advice gratis, and profound secrecy if required. Envy may snarl, but superior talents assist the Afflicted."

In the pages of the periodicals and newspapers of that time, and onwards, advertisements regarding artificial teeth, mouth washes, dental powders, etc., abound in profusion. The general run of them may be seen by the ensuing example or two:

"*Warham's* Excellent Mouth Water, which certainly cures the Tooth-ache, strengthens and preserves the Gums and Teeth, takes off all smells proceeding from bad teeth, etc. Is prepared and sold only by W. Strode, at the Golden Ball, Tottenham Court Road, London."

"*Wanted to Purchase* some old Artificial Teeth. Persons having the above to sell can apply, with the Teeth, or if forwarded by post their value will be sent per return—Mr. ———."

Many advertisements may be traced to vanity, considering which it is extremely gratifying to come across one which implies the absence of it. This reads:

"*Artificial Teeth.* Lost, about fourteen or fifteen days since, fixed in bone, from four to six in number. Whoever will bring or send them on Wednesday next, at twelve o'clock precisely, to Mr. Wickham, tobacco and snuff manufacturer, 180, Fleet Street, will receive half-a-guinea for the trouble."

The following cutting is well deserving of quotation, if only for its *naiveté.*

"*May the Wings of Extravagance be Clipped by the Scissors of Economy*—was the constant toast of a person who knew very well the value of money. To all good economists would *Jameson* wish to be recommended, though but a bad practitioner himself, (he is a little like the Clergy—'Don't do as I do, but as I tell you to do.') When you want Teeth attended to at a low price, come to the sign of the Regent in Cheapside—there you can be attended to with perfection and I am certain, for a very low fee, and any who is possessed of the least spark of parsimony will give their assent. Frugality is certainly a good thing—it enables a people to pay *taxes*—to pay their armies—*to thrash the French*—to make peace on good terms—to extend commerce—to make people live long and comfortable:—

For *Teeth Jameson* against the whole world, at the Sign of the Regent, Cheapside."

Although not strictly a professional advertisement, the next specimen, a description of a missing person, is yet worthy of study. It is certainly far from complimentary, or perhaps nature had not dealt leniently with the person in question. It will be noticed that the condition of the teeth forms an important part of the description.

"*William Walton,* a tall young man about sixteen years of age, downlook'd, much disfigured with the Small-pox, strait brown hair, *black rotten teeth,* having an impediment in his speech, in a sad-coloured suit, the coat faced with shag, a white hat with a black ribbon on it, went away from his master, etc., etc."

Again, the true pathos of advertisements must have sunk deep into the heart of every man that remembers the zeal shown by the seller of the "Anodyne Necklace" for the ease and safety of "poor toothing infants," and the affection with which he warned every mother that "she would never forgive herself," if her infant should perish without a necklace. Finally, we give what constituted one of the most simple, yet influential advertisements that have ever been penned. It was extremely smart, and well deserved any business it may have gained for its author, although it would not be considered as adding to the dignity and prestige of a dentist if issued nowadays.

"This space was sold to J. Carter, the Dentist, but as his business is sufficiently brisk already, he declines to use it."

Canonbie Road, Honor Oak.

A CORRECTION

In the article by Dr. H. H. Wallace in our August issue of THE DENTAL DIGEST (page 595) on "The Treatment of Pyorrhea Alveolaris," a slight mistake was made in one of the prescriptions as printed. "Oleum Gultheria and Oleum Cassia, 2 grains," should read 2 drams.

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Oleum Gultheria		
Oleum Cassia	aa	gr. ii
Chloroform q.s.ad.		oz. i

Sig. After brushing teeth with regular paste or powder, drop two or three drops on brush and brush well about the necks of teeth.

The Behavior of Ether in the Body

Surgical anesthesia represents one of the triumphs of experimental medicine. The introduction of anesthesia became widespread so rapidly, and its practice has become so common, that the study of the scientific aspects of the procedure has scarcely kept pace with the growing use of anesthetic substances in medicine. Many novelties have been introduced, and the technic of administration has experienced almost innumerable innovations since the middle of the last century, says an editorial writer in the Journal A. M. A. Yet there is much about the pharmacology of the anesthetics that still demands explanation. After all, the success of anesthesia depends largely on the fact that some body cells are more susceptible than others to certain drugs. As Lee expressed the situation, an anesthetic such as ether or chloroform is a depressant of living substance: when its administration is continued, it diminishes and may ultimately put a stop to vital action and cause death. It acts on all kinds of protoplasm and all varieties of cells and tissues, but in the early stages of its administration its action is more obvious on the brain than on other parts. Within the brain, it depresses first those cells whose activities are accompanied by consciousness and therefore by the recognition of pain. Next in order of paralysis comes the spinal cord, which contains the central nervous mechanism of most of our bodily movements. And lastly comes the medulla oblongata, in which lies, among other important nervous centers, the center that maintains respiration. The successful administration of an anesthetic for a surgical operation demands that just so much of the drug be given as is required by the brain cells and the cells of the spinal cord to banish consciousness and to produce relaxation of the muscles. With any amount beyond this, anesthesia approaches the danger point of stopping the breathing or the heart.

Ether still enjoys the largest popularity among the anesthetics, in this country at least; hence, all information about its properties will be eagerly sought by those who apply it in their professional work. The fate of ether, like that of all anesthetics in the body, is of foremost importance. The investigations of Haggard at Yale University have demonstrated that ether is not destroyed or utilized by the body. It is all excreted unchanged. Approximately 90 per cent. of ether absorbed can be recovered in the expired air after the cessation of the administration. A certain small amount of ether may be eliminated through the skin, in the perspiration, and in the urine. The great mass of eliminated ether, however, finds its way into the expired air. The elimination of ether through exposed serous surfaces plays an unimportant part in the general elimination of ether. The solubility of this anesthetic in blood and in water is about the same.

According to further studies by Haggard, under comparable conditions of respiration and circulation, the rate at which ether is absorbed is in direct proportion to the concentration inhaled. The time required to reach full saturation or any given percentage of saturation of the body is the same for all ether concentrations. On the other hand, the time required to absorb any given amount or mass of ether under inhalation of different concentrations is disproportionately rapid for the higher concentrations. The rate at which ether is absorbed or eliminated varies nearly, but not quite, in exact proportion to the volume of air breathed. The rate of blood flow has very little influence on the rate of ether absorption or elimination. The relatively great influence exerted by the volume of air breathed is occasioned by the high solubility coefficient of ether. The reverse relation exists with comparatively insoluble gases.

The recent studies have made clear also that the ether concentration reached in the central nervous system, not that in the body as a whole, is the determining factor in the anesthetic action of ether. The central nervous system has a much larger blood flow than have other tissues. According to Haggard, when ether is absorbed it is distributed between a small bulk on which it has a physiologic action, the central nervous system, and a large bulk, the rest of the body, on which it has virtually no action. The body thus acts through its large capacity for ether as an enormous buffer to delay both induction of anesthesia and, later, the elimination of the anesthetic. Because of its large blood supply, the brain rapidly approaches saturation at the tension of ether in the arterial blood. The ether content of the blood from the internal jugular is an index of brain saturation, and runs only a little below that of the arterial blood. The mixed venous blood of the right heart is an index of general body saturation. It approaches the arterial level very slowly. It is thus that the buffer referred to above retards the induction of anesthesia. The ether content of the arterial blood is the critical factor in determining the degree of anesthesia at the time. This factor bears no immediate relation to the total amount of ether that has been absorbed by the body.

In all considerations of the use of ether, it should be borne in mind that its vapor is an irritant. As Haggard has reminded us, ether vapor elicits from the respiratory tract the response common to all respired irritants; it causes reflex coughing by laryngeal irritation and, under suitable conditions, inhibition of respiration; it produces increased mucous flow through the stimulation of the glands of the respiratory mucosa. Its irritant action on the cornea and conjunctiva is so well known as to require no comment. In order to induce rapid anesthesia, it has become customary to administer a concentration of ether vapor much higher than that necessary to maintain fully developed anesthesia. The objectionable features of such a procedure, which always invites

irritant action, can be averted in large measure by lowering the concentration of ether used but increasing the volume of breathing through admixture with carbon dioxid, a respiratory stimulant. The same gas, used in small amounts, will subsequently facilitate elimination of ether when it is desired to terminate the anesthesia. The Yale investigators assure us that it is entirely feasible by means of inhalation of dilute carbon dioxid to produce a fivefold increase in the volume of breathing. It remains to be seen to what extent the fundamental features here emphasized will find a useful place in the current practice of anesthesia.

WANTED FOR TEXAS—50,000 dentists, preferably those who are members of the A. D. A. Bring everything you know with you, as you will probably have a good chance to use it.

HOW TO GET THERE—Buy a railroad ticket and tell the Conductor to let you off at Dallas. You will then see a big building with a lot of swell-looking dentists on their way toward it. Go right in—you're expected. Must personally register your name between the 10th and 14th of November, 1924. If you play Golf bring your "sticks."

DENTAL LAWS

Summary of Dental License Requirements Throughout the World

By Alphonso Irwin, D.D.S., Camden, N. J.

MICHIGAN, U. S. A.

The Dental Laws of Michigan are dated 1883, 1907, 1913 and 1921.

The Board of Dental Examiners consists of: James W. Lyons, President, Dwight Building, Jackson; B. S. Sutherland, Secretary, 401 Ward Building, Owosso; Wm. H. Elliot, 7643 Jefferson Avenue, East Detroit; Wm. A. Giffen, 609 Washington Arcade, Detroit; James F. Spencer, Jackson, Michigan; J. Cyrus Arnold, South Haven, Michigan; Eldred G. Robbins, Robbins Block, Ishpeming, Michigan.

The English language, dental supervision, examination, registration are required. June and November examinations are held at Ann Arbor, fee $20.00. Re-examinations, if necessary, fee $10.00. The preliminary education required is graduation from a standard High School, or equivalent 15 units; also a dental degree from a recognized dental college.

The theoretical examinations are upon the subjects taught in a standard dental school. The practical tests and other details are announced prior to the meeting of the Board of Dental Examiners.

No provision has been made for reciprocity; agreements heretofore existing have been cancelled.

If a candidate is successful in passing the required examinations, the license must be registered with the County Clerk officiating in the county where the dentist proposes to practise dentistry, fee fifty cents. Annual registration with the Secretary of the Board of Dental Examiners by May first, fee $1.00.

Dental Hygienists are examined, fee $10.00; third examination, if necessary, $5.00 additional. If a license is granted, the dental hygienist must also register with the board by May first every year, fee fifty cents. If either the dentist or dental hygienist fails to register, the license is automatically revoked in accordance with the provision made for such delinquents in the dental law.

For other details address the Secretary, B. S. Sutherland, Owosso, Michigan.

Verified April 19th, 1924.

Michigan State Board of Dental Examiners

Application for Examination for License to Practise Dentistry in the State of Michigan.

The applicant must present with this application a certificate (a blank form of which may be had from secretary of this board), properly filled out and signed by the dean or secretary of his college, certifying that he has completed, or will complete, the required course in dentistry, and will be awarded his diploma.

He must also present with this application evidence of having earned at least 15 required high school units. This must be from an accredited high school, or from a college or university of at least equal standard, and must represent four years of study and an earning in credits of at least 15 units; a unit being a study pursued for a year with five recitations each week.

Nine of these units *must* be from the following subjects: English Grammar and Rhetoric, Composition and Literature, three units required, four allowed; Latin, two units required, three or four allowed (one year's work in German or French may be substituted for the second year in Latin); Algebra, one unit required, one and one-half allowed; Geometry, one unit required, one and one-half allowed; Physics, one unit; Chemistry, one unit.

The remaining six units may be from the following subjects: History, one, two or three units allowed; Botany, half unit; Zoology, half unit; Physical Geography, half or one unit; Trigonometry, half unit; Drawing, half unit; German, two units; French, two units; Manual Training, one unit. A year's work in a dental office may be substituted for manual training. In *all* cases the applicant must present a certificate of moral character signed by not less than two reputable citizens.

Law Approved June 15th, 1921. Transcript About Examinations

Section 7. Every candidate for examination shall file a written application on a form prescribed by the board, shall present his license or diploma for inspection, and shall pay to the secretary a fee of twenty-five dollars. The applicant shall present himself before the board for examination at a date not later than the second regular meeting of the board next after filing his application, in default of which said fee shall be forfeited to said board. The examination may be written or oral, or both, at the option of the board, and shall include the following subjects: Chemistry, anatomy, histology, hygiene.

bacteriology, physiology, pathology, materia medica, therapeutics, oral surgery, metallurgy, operative dentistry, prosthetic dentistry, crown and bridge work, and orthodontia. The examination papers of each applicant shall be preserved by said board and may be inspected for six months after the date of his examination, during which period any unsuccessful applicant, by depositing fifty dollars with the secretary, shall have the privilege of having his examination papers re-read by the board in the presence of himself and any one representing him; and if upon such re-reading the board shall determine that the examination papers of the applicant should have entitled him to pass, a license shall be issued to him and the said deposit refunded but shall otherwise be forfeited to the board. Any applicant who shall fail to pass an examination shall have the right to apply for any subsequent examination, in which case he shall pay to the secretary a fee of fifteen dollars for each subsequent examination: Provided, however, That said board may for a sufficient cause remit said fee for a subsequent reexamination. Any person who in any affidavit or application for examination shall make wilfully a false statement in a material regard shall be guilty of perjury, and upon conviction thereof punished as provided by the statute of this state for the crime of perjury.

Section 8. The board shall issue to each person who shall successfully pass the examination, a license under its seal duly authenticated by the signatures of the board members. No person, not previously registered under the laws of this state in the county where his place of business is located, shall engage in the practice of dentistry until he shall have registered such license in the office of the clerk of the county where he intends to practise. It is hereby made the duty of the county clerk to register the same in a book provided and kept for that purpose, for which he shall be paid a fee of fifty cents in each case by the person offering the same for registration. Such license shall be void unless so registered within six months from the date when the holder begins practice in said county. A duplicate license may be issued by the board in case of the neglect, failure or refusal to register within said period, but only upon payment to said board of the sum of twenty-five dollars as a penalty. In case of the removal of a registered dentist to another county within the state, he shall cause his license to be registered in the same manner and within the same time as above provided. On the first day of September in each year, every county clerk in the state shall send to the secretary of the board a complete list of all dentists and dental hygienists who registered in his county during the preceding year on blanks to be sent to the county clerk by the board. Every person, firm or corporation operating or controlling any dental office or parlors shall promptly report to the board the name or names of all registered dentists in his

or their employ together with their place of residence and shall also report whenever any registered dentist shall leave his or their employ.

MINNESOTA, U. S. A.

The Dental Laws of Minnesota are dated September 1st, 1885, 1889, 1905, 1907, 1911, 1913, 1919.

Minnesota State Board of Dental Examiners consist of: F. E. Cobb, President, 601 Donaldson Bldg., Minneapolis, Minnesota; R. B. Wilson, Sec'y-Treas., 1133 Lowry Bldg., St. Paul, Minnesota; J. O. Orr, 649 Lowry Bldg., St. Paul, Minnesota; B. Featherstone, Red Wing, Minnesota; J. B. Kohagen, 510 Fidelity Bldg., Duluth, Minnesota; C. E. Garretson, Willmar, Minnesota.

The English language, dental supervision, registration and examination are required. Date of next examination announced.

Meetings—Examinations are held at the Dental Department of the State University at Minneapolis.

Time—Dates of meetings furnished upon request.

Requirements—Briefly stated the requirements of the board for a license are as follows:

You will be obliged to (a) Present a diploma from a recognized college. (b) Take a written examination on following subjects: (1) Anatomy and Histology, (2) Physiology and Hygiene, (3) Chemistry and Metallurgy, (4) Operative Dentistry and Orthodontia, (5) Prosthetic Dentistry and Crown and Bridge Work, (6) Pathology and Bacteriology, (7) Oral Surgery and Anesthesia, (8) Materia Medica and Therapeutics; (c) Take a practical examination as follows:

(1) Prepare cavity and make one gold filling. (2) Prepare cavity and make one amalgam filling. (3) Bring Plaster Models of upper and lower edentulous mouths, mounted on *anatomical* articulator, with trial plates and bite waxes in place, but *not fastened to casts,* for the setting up of a full upper and lower set of teeth. (4) Prepare cavity and make gold inlay. A passing grade of 75 per cent is required. All material and instruments must be furnished by the applicant, except casting machine.

All applications should be in the hands of the Secretary at least ten days previous to examination. Fee $20.00.

Do not send diploma to Secretary. Present it at time of meeting. Photographs are not required.

Permits to practise without a license cannot be issued.

Annual registration by May 1st; fee $1.00.

The board is operating under the dental laws dated 1905-1911.

For other information, apply to

R. B. Wilson, *Sec'y-Treas.,*
1133 Lowry Building, St. Paul, Minnesota.

Verified April 25th, 1924.

Revised Laws of Minnesota, 1905, As Amended in 1911

Transcript About Examinations

Chapter 221—Sec. 2316. *Examinations—License—Revocation—Assumed Name.* A person not already a registered dentist of the State desiring to practise dentistry therein, shall apply to the secretary of the board for examination and pay a fee of twenty dollars ($20) for the first examination and twenty dollars ($20) for each subsequent examination, which in no case shall be refunded. At the next regular meeting he shall present himself for examination and produce his diploma from some dental college of good standing, of which standing the board shall be the judges, also satisfactory evidence showing that the applicant is of good moral character. The board shall give the applicant such an elementary, practical examination as to thoroughly test his fitness for the practice and include therein the subjects of anatomy, physiology, chemistry, materia medica, therapeutics, metallurgy, histology, pathology, and operative, surgical and mechanical dentistry; and the applicant shall be required to demonstrate his skill in operative and mechanical dentistry. If the applicant successfully passes the examination, he shall be registered by the board as a licensed dentist, and supplied with the certificate of registration signed by all members of the Board of Dental Examiners.

Provided that any dentist who has been in legal practice in another State having and maintaining an equal standard of laws regulating the practice of dentistry with this State, for five years or more and is a reputable dentist of good moral character, and is desirous of removing to this State and deposits in person with the Board of Dental Examiners a certificate from the Examining Board of the State in which he is registered, certifying to the fact of his registration and that he is of good moral character and professional attainments, and upon payment of a fee of fifty dollars ($50) may, at the discretion of the Board, be granted a license to practise in this State without further theoretical examination.

The Board upon hearing, after twenty days' notice thereof, may revoke the license of anyone who, with intent to deceive the public, shall practise dentistry under an assumed name or where it shall be shown that the holder of such license is not of good, moral and upright character. It shall be no defense for a person prosecuted for practising dentistry under one name, without a license, that he shall have been licensed under a different name unless it shall be shown that such practice was without intent to defraud or deceive.

DENTAL ECONOMICS

An Address to the Dental Students as the Dentists of the Future

By Hedley Ham, L.D.S., D.D.S., Melbourne, Australia

(*Continued from August*)

Attendant

Time is the dentist's asset and should never be used for doing trivial things that can be done by an attendant. If the fee is to be regulated by time, then none of the time that includes things that should be done by the attendant should be charged for. The attendant should be well educated, capable of writing letters, and of good manners and address. She is the buffer between you and the patients, and she should be able to assume the responsibility of taking charge. Some of her duties I quote, but time will not allow me to go into them fully. She should receive patients, get their addresses and their recommendations, look after their comfort, their appointments and their cards. She should also answer the telephone, and answer it in a properly trained manner, and call you only when she has the person you wish to speak to. Then when called you should go at once yourself. She should seat the patient, spray the mouth, place clean towels, etc. She should be capable of buying supplies and stocks at the best market prices. She should look after the laundry, sterilize and polish instruments, see that everything is clean beyond reproach, see everything and do everything for the operator, and even *anticipate* his requirements. She should never discuss your patients or your financial affairs, nor repeat anything heard in your rooms. She should never let the patients look over the appointment book. She should be present at all anesthetics and at any operation for a new patient. There are so many qualifications needed in a good attendant; and when you do get one, treat her with every courtesy and respect, but not with familiarity.

Waiting Room

The waiting room should be neatly furnished, chairs should be comfortable, literature on the table should cater to different tastes—magazines for ladies, journals for boys and girls of different ages,

books for children, and one or two good periodicals, which should be of *current* issue.

Wall decorations should be few, as they collect dust. One or two pictures, prints or etchings, if you like, but they must be good. The room is much cleaner and more sanitary without them. Sometimes a bowl of small goldfish, if properly looked after, is a great attraction for children, and a distraction for the nervous ones.

Operating Room

The operating room should be furnished on the principle of keeping it clean. Those of you who contemplate starting practice soon will probably have the opportunity of visiting the offices of the older men or of being shown the latest equipment by the depots. Just what brand of chair, unit engine, etc., to have you will decide for yourselves, but don't overdo the equipment and furniture and sacrifice usefulness for display. The plumbing, the color of the walls and the lighting are important factors to note, especially the last, and I quote the points again that have appeared in various journal articles.

Avoid bright walls which reflect into the operator's eyes, green and brown shades preferably. Avoid flooding the room with light, especially the lower portion, toward which the operator's gaze is frequently directed, but concentrate the light on the field of operation and leave the rest of the room in shadow. Never face a window or a bright light. Avoid very large windows or skylights; or if present, keep a portion of them shaded. If two shades are used the top and the bottom of the window can be shaded separately. If possible, light should come from a window at the operator's back. Avoid bay windows and provide a good artificial light reflector for dark days.

To save time while the operating room is being put in order, a retiring room to which the patient may be sent is desirable.

Do not exhibit diplomas, certificates, etc., in the operating or waiting room. It is not considered the correct thing to do.

Appointments

It is a good plan to insist on every patient's having a card with the dates and times of the appointments, then there can be no dispute; and if the appoinment is broken and no excuse or notice sent a reasonable time beforehand, the broken appointment should be charged for.

If the dentist, through unavoidable circumstances, has to keep a patient waiting, don't let the patient wait without being told about how long it will be necessary before being attended to, and if you can go and excuse yourself personally, so much the better. Patient's time may be as valuable or more so than yours, which reminds me that if another dentist or doctor calls on you, see him as soon as you can, because he is busy also, and it is bad form to let him wait.

Appointment cards are easily obtained and should be as plain and simple as possible.

Fees

Now we come to the principal business part, that is, the computation of fees. I am not going to enter into the service-selling discussions on this question, but shall try to put down the points brought out by G. W. Clapp and others in their method as something tangible to go on, and these points you can adapt or adjust as you please. The old idea of charging for operations as a class, so much for gold filling, so much for an amalgam, irrespective of the quality or of the time taken, etc., must now go. That procedure handed down by tradition, usage or through competition, has been the means of a great deal of unfairness both to the public and to the dentist and a delusion and a snare in computing costs to the latter.

Then the hour fee was introduced, but that, too, has some disadvantages. For instance, a patient knowing that he was being charged by the hour might be suspicious of every moment the dentist was away from the chair; or if legitimate work, such as touching up an inlay, etc., was being done in another room, he might reckon that as time off, so to speak, and it might lead to some misunderstanding. This new system is a computation of fees on a basis of standard averages for operations per hour. All men do not work at the same rate, but it would not be difficult to strike an average for the time necessary to do a good gold filling or to average the times necessary for the different sizes of fillings or the quality of the work put into them. An average is taken as a standard to which the dentist works and for which he charges. In this system, then, he must for some time keep a record of the different amounts of time taken for the various operations he performs, and the greater number of these operations he records the surer he will be in his estimation of fees when requested to quote an approximate fee for prospective work.

Then he must find out his income hours as distinguished from his office hours. The hours that a dentist spends in his office have been averaged to be 8 hours a day, or about 2,000 hours per year. These hours are based on deduction from the year of 52 Sundays, 6 public holidays, 28 days for vacation, 21 days for dental meetings, etc., and 8 days for some half-days on Saturdays. No one should work seven days a week, and if he is compelled to work at night, as some suburban practitioners do, then he should take certain afternoons off. All these hours, however, are not altogether earning hours; nearly half of them are lost in receiving and dismissing patients, discussions, explanations, telephone and other interruptions. Only about 1,000 hours provide the money to defray expenses and give the dentist his

remuneration. He needs to know how much he must earn in each hour and what his expenses are, for only by knowing his costs per working hour and how long different operations take him can he quote advance fees fair to himself and his patient. He must be sure that each income hour earns enough at least to defray expenses and afford remuneration. His object, then, is to increase the number of income hours in the 2,000 office hours. He should record the number of income hours in order that he may know how many hours produce his income.

From time to time one hears and reads of fees, high fees, estimated on the value of the service rendered to the individual. The value of service may be worth a very great deal more to the patient than it costs the dentist to render it, just as a simple meal might be worth anything to a starving man. The cost of service to him who renders it is determined by the expense involved in preparing to render it, plus the value of his time at the price generally paid by the community.

The value of special dental service may be so great that it cannot be adequately estimated or paid for, so that to a very wealthy patient the value of service rendered may be taken into consideration when estimating a fee, but to bring the value down to the common use the basis should be fixed on what it costs to render the service.

(To be continued)

The Antioch Business Code

Sound business is service which benefits all the parties concerned. To take profit without contributing to essential welfare; to take excessive profit; to cater to ignorance, credulity, or human frailty; to debase taste or standards for profit; to use methods not inspired by good will and fair dealing; this is dishonor. Whenever I make or sell a product or render a business service, it must be my best possible contribution to human well-being.—ANTIOCH COLLEGE NOTES.

PRACTICAL HINTS

This department is in charge of V. C. Smedley, D.D.S., and George R. Warner, M.D., D.D.S., 610 California Building, Denver, Colorado. To avoid unnecessary delay, Hints, Questions and Answers should be sent direct to them.

NOTE—Mention of proprietary articles by name in the text pages of the DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule. This Department is conducted for readers of the DENTAL DIGEST, and the Editor has no time to answer communications "not for publication." Please enclose stamp if you desire a reply by letter.

Editor Practical Hints:

Will some one tell me how to treat a patient before and after the removal of his teeth, who is likely to bleed almost to death from the operation? C. H. R.

ANSWER.—If you have any advance information or suspicion that the patient is a bleeder, have his physician take the coagulation time-test and report the results to you. If this is not possible, a rough test may be made by drawing a drop of blood from the lobe of the ear or elsewhere. Normally the drop of blood appearing every thirty seconds will cease after ten or twelve blottings, since the normal coagulation time is from two to eight minutes, depending on temperature, time of day, surface, etc. If it takes longer than that, give a hypodermic injection of a hemostatic such as thromboplastin or hemoplastin. Make another coagulation test in from four to six hours and if satisfactory proceed with the operation. If not, give another injection.

—V. C. SMEDLEY.

Editor Practical Hints:

Can you give me a formula or the name of a solution which will brighten the white metal of impression trays which have become dulled.

All of the members of our group, together with our assistants, enjoy your column in the Digest. M. E. V.

ANSWER.—I am sorry to have to acknowledge that I do not know of any formula or solution such as you request, but will publish your question and trust that some of our readers may be able to help us both out. In our office our trays are kept bright by polishing on the

laboratory lathe with pumice and whiting when they become badly scarred and tarnished. If they are not so bad, my chair assistant uses a good scouring soap or whiting on a brush or cloth in her hands.

—V. C. SMEDLEY.

Editor Practical Hints:

I am sending radiogram of lower first molar. I would be very grateful for your diagnosis and treatment of same. The patient seems to suffer no bad effects from this tooth in any way. C. A. M.

ANSWER.—The radiographic evidence of the condition of the lower right first molar would indicate that there is no active infective process, and inasmuch as your patient shows no systemic evidence of focal infection it probably would be wise to leave the canals of this tooth strictly alone. It is possible that there is still vital pulp tissue in the apical portion of these canals and if there is the condition would not be improved by opening into them, and even though the pulp may be non-vital clear to the very apex as long as it is quiescent it would be wise to leave it undisturbed, because when opening in for retreatment new infection is apt to be introduced and the condition made much worse.—G. R. WARNER.

Editor Practical Hints:

Would you kindly advise me as to what is the best restoration to make for the following case:

Upper—Two anterior bridges in place. Richmond crowns on right central and left lateral, replacing left central; also Richmond crown on right cuspid, which replaces right lateral. Left cuspid in place, which has a distal occlusal gold inlay. Right first molar in place, which has a large M. O. D. amalgam restoration. These teeth are all healthy and sound; all other teeth missing. I would like to put in a bar denture, if possible, and would appreciate your assistance.

A. S. F.

ANSWER.—Have you had X-Ray pictures of these Richmond crowns and the molar with large amalgum so that you know that they are sound and healthy, as you say? It has been my experience that a large majority of roots carrying Richmond crowns carry more or less apical infection also, and it might be the simplest and best thing to do in this case to extract all teeth and have a full upper set. If, however, these teeth are sound and worthy to be retained I should think a very satisfactory bar denture could be inserted with clasp anchorage on the molar and cuspids.—V. C. SMEDLEY.

Editor Practical Hints:

I am enclosing articulated models of an upper and lower jaw. You will notice on the model that some of the teeth have been removed and on the left side of the mouth you can see that the upper second and third molars almost touch the lower ridge and that there is very little space between the lower second bicuspid and the upper ridge.

Will you please suggest a way of replacing the teeth which have been lost on both sides of the mouth if it is possible to do so?

J. R. A.

ANSWER.—Permit me to suggest that in such a case as this a little more time and pains in the preparation and mounting of study-casts would be advisable. It does not look to me as though these casts could be an accurate reproduction of the conditions in the mouth, either as to tooth contour or occlusal relation. Assuming, however, that the conditions in the mouth are approximately as they appear on these models, it is entirely feasible to make a very satisfactory restoration. Assuming, also, that the remaining teeth are all healthy members and reasonably sound, I would be inclined to recommend that both sides of the upper jaw be restored with fixed bridges and that the lower be supplied with a lingual bar removable case clasping the molar and two second bicuspids with round wire clasps with strong occlusal lugs. The two elongated molars on the left side should be ground sufficiently to permit of a gold saddle carved in wax and cast to occlude advantageously with these shortened molars.

If there is any serious doubt in your mind as to your ability to carry this case through in a satisfactory way, the best thing for you to do would be to refer the patient to the most skillful dentist you know of in the handling of restoration cases. It is always much better judgment as well as much better practice to refer a case where it will be skillfully handled than for a man to attempt to restore the case himself when it is beyond his knowledge, skill and ability. The patient will think a great deal more of you and be much more apt to come back to you for other work and refer other patients to you for work than they would if you undertook and bungled a job for them.

—V. C. SMEDLEY.

Editor Practical Hints:

Five years ago I made a beautiful piece of work for a patient. This was an M. O. inlay abutment for right upper second bicuspid, and a three-quarter crown for the cuspid, placing the first bicuspid, but without a break in the bridge. The posterior abutment is entirely solid and satisfactory, but the cuspid has decayed considerably so as to warrant its replacement.

How can I remove this bridge? Thank you for the information.

J. E. W.

ANSWER.—Referring to your favor of the 29th ult., in such a case as this, if the second bicuspid inlay is a satisfactory fit and does not require replacing anyway, I would cut the bridge mesial to it allowing it to remain in place. Next prepare a seat in this bicuspid inlay for a strong dovetailing lug for which cast a clasp metal fitting. Then make a new abutment for the cuspid, soldering this and the metal lug to the first bicuspid dummy. Soldered rigid attachments to both abutments are not necessary in a bridge with so short a span.

In a case where it is desirable or necessary to remove an inlay abutment such as the one in this bicuspid without destroying the inlay, this may frequently be accomplished with a crown remover, the name of which I can not give you, but it operates as a movable weight on a steel rod, one end of which hooks under the bridge and the other end contains a lug against which the weight is thrust with a jarring action. This will usually result in the breaking of the cement attachment and the loosening of the inlay.—V. C. SMEDLEY.

Editor Practical Hints:

Have a lady patient with Watts metal lower; been made about 12 years. Recently on a visit some dentist suggested to her that possibly her plate was the cause of her stomach trouble, with which she has been bothered for about twenty years, but has been in a more aggravated form in the past four or five years. Is there a possibility of the plate causing this trouble?

What does the title D.M.D. designate as used by some of our profession? I. W. W.

ANSWER.—I do not believe that Watts metal could in any way be a direct cause of stomach trouble. As a matter of fact, however, the principle of a heavy lower plate, such as Watts metal or weighted rubber, does not appeal to me. It is my opinion that the extra weight in such a case has a tendency to increase resorption and therefore should be avoided. The only way that I can see that such a plate might have any connection with impaired digestion is in case this weight had produced excessive resorption and consequently impaired the function of mastication.

In all probability the best thing for this patient to do, if her plates fit and occlude reasonably well, is to forget the idea that this lower plate may be the cause of her indigestion and see if the condition can not be corrected through a carefully and scientifically regulated diet.

The title D.M.D. is conferred by the Dental Department of Harvard University, and stands for the words Doctor of Dental Medicine.

—V. C. SMEDLEY.

Editor Practical Hints:

Have a patient, a boy of fourteen, who had the misfortune of getting an upper central badly broken about two years ago. I deferred doing anything at the time, as the tooth was not unduly sensitive, thinking that I could do better service by waiting till I was sure the tooth was fully developed, especially as I wished to properly match the adjoining central as well as possible.

I thought of using a porcelain jacket crown, but feared that by doing the work at that time possibly later on the sound central would out-grow its fellow. Also did not wish to endanger the life of the injured tooth by cutting it down.

Wish to know if I can safely crown the tooth now, and if there will be any material change in the other central from now on, making any appreciable difference. J. S. W.

Answer.—As a rule it would not be wise or safe to prepare a vital central at the age of fourteen for a jacket crown, and I certainly would not consider doing so without making an X-Ray study of the tooth. A good X-Ray picture will show how large the pulp is and also the unerrupted portion of each central crown still above the gum line. It is possible that the fracture of this tooth two years ago has resulted in just sufficient irritation to stimulate a generous laying down of secondary dentine sufficient to reduce the pulpal area enough to make a jacket crown a safe procedure at this time, but in all probability this work should be deferred for at least two or three years longer.

I have seen cases of these fractured incisors where the fracture does not extend too far toward the gingival or up into the body of the tooth where the correction is most satisfactorily made by a gradual elongation of the broken tooth through a simple orthodontic procedure accompanied by the grinding of the incisal edge as the tooth comes down until the fractured portion is practically or quite eliminated, with a result often much more satisfactory both from the esthetic and utilitarian standpoint than could be procured in any other way. If, however, a crown is necessary, the porcelain jacket is, without doubt, the one indicated in such a case.—V. C. Smedley.

DENTAL LABORATORIES

American Dental Laboratories Association Meeting

Morrison Hotel, Chicago, Ill., September 15-17

(EDITOR'S NOTE. Few organizations associated with dentistry offer possibilities of greater practical value to all concerned—and that includes most dentists—than the American Dental Laboratories Association, which will hold its annual meeting as per the announcement herewith.

The industrial dental laboratory has come to stay. At just what level of service and satisfaction it will stay depends largely upon the quality of service it renders and the education it imparts.

The purpose of this meeting is that members may confer among themselves as to how laboratories can cooperate better with dentists and to discuss improvements possible in certain phases of technic. The members hope to develop a Code of Ethics among themselves, so that there will sometime be ethical dental laboratories.

Dentists are cordially invited to attend any of the sessions, but the program for Wednesday has been prepared to be of special interest to dentists, and they are invited particularly for that day.)

PROGRAM

MONDAY—SEPTEMBER 15TH

9.30 A. M. President's Address.....J. C. Schwartz
10.00 A. M. "Cooperation".....W. H. Schroll
11.00 A. M. "Employees".....Henry P. Boos
1.30 P. M. "Scientific Partial Denture Construction"..I. J. Dresch
Illustrated Lecture on "Vulcanite Rubber"
Charles Henderson
Clinic .....I. J. Dresch

TUESDAY—SEPTEMBER 16TH

9.30 A. M. "Advantages of the Laboratory to the Profession"
Dr. W. A. Giffen, President of the American Dental Association
10.30 A. M. "The Relation of the Dental Laboratory to the Dental Profession".....J. C. Schwartz

11.00 A. M. "What the Dentist Expects of the Laboratory". Dr. Hart
1.30 P. M. "Advertising" ..... B. I. Martinez
2.30 P. M. EVERYBODY'S HOUR

Open discussion on Porcell's New Gum Facing, Gold-plated Dentures, Orthodontic Appliances, New Methods.

Clinic, "Hazards in Casting" ..... Mr. Ackerman

WEDNESDAY—SEPTEMBER 17TH

9.30 A. M. "Mouth and Tissue Diagnosis" ..... Dr. M. M. House
10.30 A. M. "Instructions on Preparation" ..... S. G. Supplee
11.30 A. M. "The Supply House Laboratory" ..... E. L. Mueller
1.30 P. M. Business Meeting and Election of Officers.
Clinic.

DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All questions and communications should be addressed to Miss Elsie Pierce, care of THE DENTAL DIGEST, 220 West 42nd Street, New York City.

In the July DIGEST a method was given for removing teeth from vulcanite dentures, and in reply to this the following letter was received:

"The method of removing teeth from vulcanite dentures which you give in the July DIGEST may be the quickest way, but it is not the *best* way, as teeth are often checked or broken. In nineteen years I have discovered that the best way to remove teeth is to fill the lower part of a vulcanizing flask with dry plaster or pumice powder; place plate, teeth down, in powder; heat over Bunsen burner or other flame until rubber is soft, so that plate will "spread" when pressure is applied to palatal portion. Then teeth may be pried off easily with no breakage. If time permits, the rubber adhering to the teeth may be softened to the consistency of dried mud by covering the teeth with chloroform in a small wide-mouthed bottle, leaving overnight, or for at least three or four hours, with the bottle corked, of course." F. A. R.

What is the difference between a radiograph and a radiogram?
S. B.

Radiograph is used to indicate the *process* of taking radiographic pictures, or the machine which takes the picture, or the film itself. Radiogram is the word used for the picture only. From the derivation of the word radiograph, it suggests the first two definitions rather than the last.

How long should instruments be kept in the sterilizer?
A. G.

They should be in the sterilizer for at least five minutes if the solution is boiling when they are put in, and may be left for a longer time. If a 2% solution of sodium carbonate is added to the solution it will prevent instruments from rusting and will hasten sterilization. Sterile gloves should be used in removing surgical instruments from

the sterilizer and after the instruments have been rinsed in alcohol should be wrapped in sterile gauze.

What is the temperature of the human body at normal?

R. D.

It varies somewhat in different individuals, but the average normal temperature is 98.6 degrees Fahrenheit, or 37 degrees Centigrade.

What method do you advocate for the cleaning and sterilizing of brushes used in the cleaning of teeth? M. B.

If you mean the cleaning brushes used in the dental engine, you may use an alcohol-formalin solution or high-pressure steam. Boiling is apt to soften the bristles so much as to render them useless. A fresh brush should be used for each patient, however, and then cleaning will not be necessary.

The doctor for whom I work used the word "strata" recently, but I do not find it in the dictionary. Please tell me what it means.

K. S.

Strata is the plural of "stratum", which means "layer" and forms its plural in the same way as "datum," the singular of "data."

I hear cavities referred to as "Class I cavities," "Class II cavities," etc. What does the "class" mean? A. L.

Anthony's Dental Dictionary gives the classification of cavities as follows:

Class I. Cavities beginning in pits and fissures in any parts of the teeth in which these occur.

Class II. Cavities beginning in the proximal surfaces of the bicuspids and molars.

Class III. Cavities beginning in the proximal surfaces of incisors and cuspids which do not require the removal and restoration of the incisal angle.

Class IV. Cavities beginning in the proximal surfaces of the incisors which require the removal and restoration of the incisal angle.

Class V. Cavities beginning at the gingival third of the labial, buccal or lingual surfaces of the teeth.

EXTRACTIONS

No Literature can have a long continuance if not diversified with humor—*ADDISON*

Among other things our country needs is a lawn grass that will grow an inch high and then quit!

The book of etiquette doesn't explain why the bully who pounds on the table gets served first.

Old Abe Grabstein, the millionaire manufacturer of non-refillable sausage casings wanted a college graduate for office work. When the first applicant appeared Abe asked him for his diploma.

"My dear sir, I don't carry it around with me," said the young man, "but I assure you I have one."

"Vell, say me a big woid—mebbe I could tell that way."

The student reeled off the biggest word he could think of and got the job.

A puncture is a hissing sound closely followed by profanity.

The Ford taxi suddenly came to a halt in the middle of the street.

"What is the matter?" called the man from the back seat.

"I thought I heard the young lady say 'stop'," answered the chauffeur.

"Well, she wasn't speaking to you, was she?"

SOME BOAT!

A canoe is a hearse with the wheels off and the body remoulded and painted red, green or orange.

Why any young man should want to go to heaven in a sport shirt and white flannel trousers, accompanied by a summer girl of slight acquaintance, is difficult to understand, yet thousands of them go in for canoeing every summer.

The Lord made Adam. Eve was made from one of Adam's ribs. The human race multiplied rapidly. There came the great danger of overpopulation. So man made canoes.

It was a bright idea. Wars and automobiles help a little, but the canoes really keep the population down where a census man can handle it. The difference between canoes and war is that in a war every occupant has a fair chance of seeing his folks again. This is due to the fact you can't rock a war.

People who use canoes are the same kind of people who pare corns with a dull razor and take pills out of medicine cabinets in the dark.

A wife is a person you can teach to drive a car without hugging her.

Another man just back from Philadelphia writes in to tell us how "swift' the people are in that community. He observed that they are very fond of snails but can't catch them!

An American in the Gare du Nord restaurant the other day insisted upon lugging a huge valise along with him to the table despite the protestations of the maitre, who explained that customers were expected to leave their baggage with the vestiare, or "check-room boy."

"But it is my purse," replied the traveler. "I am going into Germany."

"Do ye belave in dhrames, Riley?"

"Oi do," was Riley's reply.

"Phwat's it a sign of if a married man dhrames he's a bachelor?"

"It's a sign that he's going to meet wid a great disappointment when he wakes up."

There is always a bright side. When the home team loses you are not so hoarse the next day.

YOU CAN SING THIS

Down where the belt clasps a little stronger,
Down where the pants should be a little longer,
That's where the Vest begins;
Down where you wish you were a little slighter,
Where the shirt that shows is a little whiter,
Where each day the buttons grow a little tighter,
That's where the Vest begins.

Down where the pains are in the making,
And each heavy meal will soon start it aching,
That's where the Vest begins.
Where each added pound is the cause of sighing,
When you know in your heart that the scales aren't lying,
And you just have to guess when your shoes need tying,
That's where the Vest begins.

DIETETICS and HEALTH

Vitamin Confusion

Only a few years have elapsed since the existence of vitamins was first brought prominently to attention. The claims for the existence of such accessory food factors were received with skepticism for some time, for it seemed unlikely that substances playing a prominent part in nutrition could have escaped recognition so long. Most of the earlier observations and deductions have now been tested repeatedly and found to be correct. Within less than a decade after Funk coined the word vitamin, he felt justified in stating that the subject of vitamins, already beyond the stage of hypothesis, is based on a firm foundation and has received universal recognition. In spite of this, we are well aware, he adds, that great gaps exist in our knowledge, so that we cannot regard the chapter as closed. The skepticism in regard to the existence of such special and unique dietary essentials—substances characterized by a disproportion between the apparent large importance of their functions and the small amounts in which they are ordinarily consumed, has in part arisen from the failure heretofore to isolate and identify the vitamins as chemical entities. Hence, a student of the problem has remarked, in answer to the skeptic, that, to be logical, the latter should avert his eyes from such agents as toxins and antitoxins, not to speak of enzymes, powerful realities all of them, which, though of unknown constitution, by no means elude objective and quantitative study.

Study of the vitamins had not proceeded very far before it became apparent that more than one of these newly recognized factors may be concerned in securing the normal functioning of the organism. In estimating the nutritive requirement of the organism, it presently became necessary to take into account not only the four food categories, protein, carbohydrate, fat and inorganic material, that had long been regarded as fundamental, but also a diversity of the less clearly defined dietary components. Thus, it is clearly appreciated today that, in order to avert scurvy, beriberi, rickets and xerophthalmia, for example, it is necessary to supply four demonstrably distinct food factors or vitamins; nor is the possibility of specific requirements exhausted with this list. Lately, experiments have been recorded that furnish

strong presumptive evidence that the success of the reproductive functions may depend, in part at least, on the presence of as yet undefined chemical substances, as, indeed, the proper activity of the thyroid is bound up with a small supply of the element iodin.

As might be anticipated, progress in the study of the rôle of such vitamins soon encountered the problem of nomenclature. At first, investigators were content to describe the products used in terms of their solubilities, as the water-soluble or the fat-soluble vitamin. Such a classification quickly found its limitation with the increasing number of possibilities. McCollum and his collaborators attempted to find a way out of the growing perplexities and state of confusion by employing provisional algebraic terms, using a prefix designating characteristic solubility. Thus arose the terms fat-soluble A and water-soluble B, to which Drummond added the suggestion of water-soluble C to designate the antiscorbutic properties of foods.

Obviously, if the chemical identity of the vitamins should be discovered, the questions of nomenclature could be answered on the basis of chemical structure. Meanwhile, inexcusable confusion has been added to an already tangled situation, not only through the designation of different properties by the same alphabetical symbol, but also by the application of different letters to the same vitamin potency. For this unfortunate situation, some of the investigators are themselves directly or indirectly responsible. The most recent instance, which has had much erroneous or misleading exploitation in the lay press, involves the alleged isolation of "bios," the material that Wildier, Amand and Devloo of Louvain, Belgium, prepared from yeast and found to be essential for the rapid proliferation of yeast cells. To a comparable product Funk had earlier given the designation vitamin D, an unfortunate selection because there is little or no convincing evidence that the "bios" component of yeast plays any indispensable part in the function of animals, and because, with this exception, the vitamin series had until then been applied primarily to animal nutrition. In describing an exhibition of the unidentified "bios," the reporters remark that "it created a sensation since it was the first vitamin that any one had ever seen or handled"; and they proceed to imply that this "reduced pyridin ring" is essential to animal existence.

Nor does the confusion end here. The expression vitamin D has been applied by one investigator to designate the antirachitic property of cod liver oil, in distinction to its content of antiophthalmic and growth-promoting vitamin A. Another prominent writer prefers to refer to the antirachitic vitamin with the suffix X, whereas Evans has employed the latter to designate the factor influencing fertility. To avoid this incongruity, it has since been proposed that the latter be termed vitamin E.

Commenting on the equally confusing array of names that was

being introduced into the new discipline of immunology a few years ago, a thoughtful critic remarked that science was in danger of becoming a mere play of words. To those who may regard the story of the vitamins as a mere juggling of alphabets, the apologies should be supplemented with a reminder that, despite the momentary contradictions, there are real discoveries of large significance intermingled in the confusion of terms. What's in a name? The practical value of the knowledge already gained is sufficient to redeem the subject from the ignominy of its unfortunate literary beginnings. Fruits and vegetables, cream and cod liver oil have acquired new meanings since the advent of the vitamin theory. And now the time has arrived for progress in the direction of precision. To permit this, Funk has remarked, it would be very desirable that at least some of the workers should abandon the beaten path of exclusive animal experiments and break a fresh trail leading toward the chemistry, physiology and pharmacology of the vitamins, as well as the anatomic pathology of the avitaminoses.

—*Journal American Medical Association.*

He Should Worry About Dentists

John Calhoun, aged 80 years, who lives in the Bixlers Ferry section of Luray, Va., is the owner of a most remarkable set of teeth, in addition to many other things that render him a wonder, according to a report in The Journal of A. M. A. Back where the teeth start in the ordinary person's mouth begins a solid mass of bone, with no indication of a single tooth in his head. This piece of bone continues all around the gum, giving the old man a solid, compact mass of bone with which he performs his mastication. Along the front row of the bony substance there are a few creases, showing that nature evidently intended to give him single teeth, but the purpose went awry from some cause. With this mass of bone the old man is able to grip an ordinary eight-penny nail while he uses his fingers in twisting it into any desired shape. The old man has never been known to spend an idle day in his life, his companionship with the pick, shovel and plow giving him infinite pleasure.

FUTURE EVENTS

The Semiannual Meeting of the MARYLAND STATE DENTAL ASSOCIATION will be held at the Francis Scott Key Hotel, Frederick, Maryland, September 22, 23, and 24, 1924.

The fall meeting of the NEW YORK SOCIETY OF ORTHODONTISTS will be held the afternoon and evening of Wednesday, October 8, 1924, at the Hotel Vanderbilt, Park Avenue and 34th Street, New York City.

WILLIAM C. FISHER, *Secretary*,
501 Fifth Avenue, New York.

THE GEORGIA STATE DENTAL SOCIETY will meet in conjunction with the American Academy of Periodontology at Atlanta, Ga., October 9-11, 1924, at the New Atlanta Biltmore Hotel.

G. A. MITCHELL, *Secretary*,
Atlanta, Ga.

The sixty-first meeting of the SUSQUEHANNA DENTAL ASSOCIATION OF PENNSYLVANIA will be held at Irem Temple, Wilkes-Barre, Pa., October 21-23, 1924.

The annual meeting of THE AMERICAN SOCIETY OF DENTAL RADIOGRAPHERS will be held at the Adolphus Hotel, Dallas, Texas, Friday and Saturday, November 7 and 8, 1924.

All dentists interested in radiography are invited to attend.

ARNOTT A. MOORE, *President*,
131 Allen Street, Buffalo, N. Y.
MARTIN DEWEY, *Secretary*,
501 Fifth Avenue, New York, N. Y.

The annual meeting of the NATIONAL ALUMNI CHAPTER OF THE PSI OMEGA FRATERNITY will be held at the Southland Hotel, Dallas, Texas, Monday, November 10, 1924.

The Executive Committee will meet at 10 A. M. The general meeting will start at 2 P. M., and everyone is urged to be on hand promptly.

A "stag" banquet will be held at 7 P. M. Reservations must be made by 4 P. M. Big surprise for those who attend!

LLOYD S. HUHN, *Grand Master*,
3166 Lincoln Avenue, Chicago, Ill.

TRAP SHOOTERS—ATTENTION! The annual shoot of the TRAP SHOOTERS LEAGUE OF THE AMERICAN DENTAL ASSOCIATION will be held at Dallas, Monday, November 10, 1924, at one o'clock.

Arrangements have been made for the use of the Dallas Gun Club Grounds. Suitable prizes will be provided and program so arranged that all shooters will have a look-in.

Pack up your old gun and meet us at Dallas!

Watch magazines for further notice and full program.

F. C. McGAUGHY, Galion, O., *President,*
F. P. LEONARD, Bucyrus, O., *Secretary,*
ELL. KNOX, Dallas, *Chairman Local Committee.*

A meeting for the purpose of organizing an AMERICAN DENTAL ASSISTANTS' ASSOCIATION will be held at Dallas, Texas, November 10-14, 1924. An invitation is extended to all dental assistants' societies to send a representative.

JULIETTE A. SOUTHARD, *Chairman,*
174 West 96th Street, N. Y. City.

The next semi-annual meeting of the COLORADO STATE BOARD OF DENTAL EXAMINERS will be held in Denver, commencing December 2, 1924, and will continue for five days.

For further information, address:

WM. H. FLINT, D.D.S.,
Littleton, Colo.

The midwinter clinic and meeting of the CHICAGO DENTAL SOCIETY will be held at the Drake, January 21, 22, 23, 1925.

A splendid program is in preparation which will equal, or perhaps surpass, any of the previous efforts of the Society. Of course, all members of the American Dental Association are cordially invited and are most welcome.

Information may be secured from any of the following chairmen:

Chas. W. Freeman, 25 E. Washington Street, Program Committee.

F. G. Conklin, 523 S. Crawford Avenue, Clinic Committee.

Hugo G. Fisher, 25 E. Washington St., Exhibit Committee.

Hotel reservations should be made direct with the particular hostelry you prefer. Certainly the Drake would be most convenient.

The customary reduced railroad rates will be available.

For general information address the undersigned:

M. M. PRINTZ, *Secretary,*
25 E. Washington St., Chicago.